OIPE JC177
JAN 16 2004
PATENT & TRADEMARK OFFICE

FIG. 1

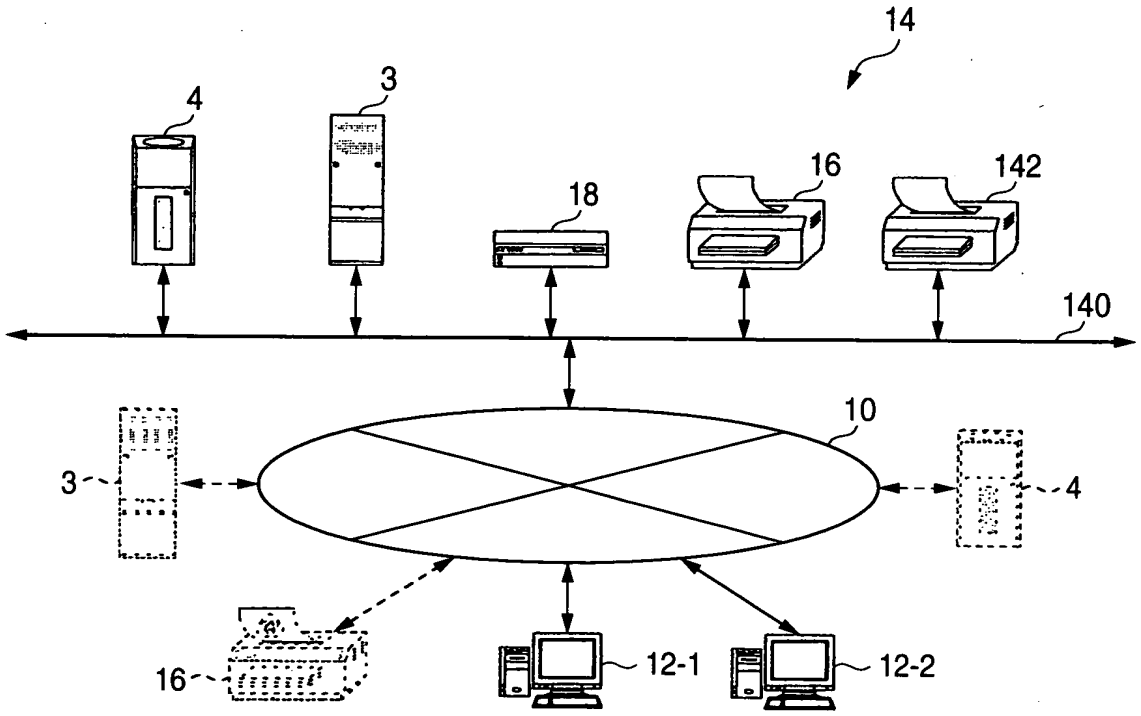
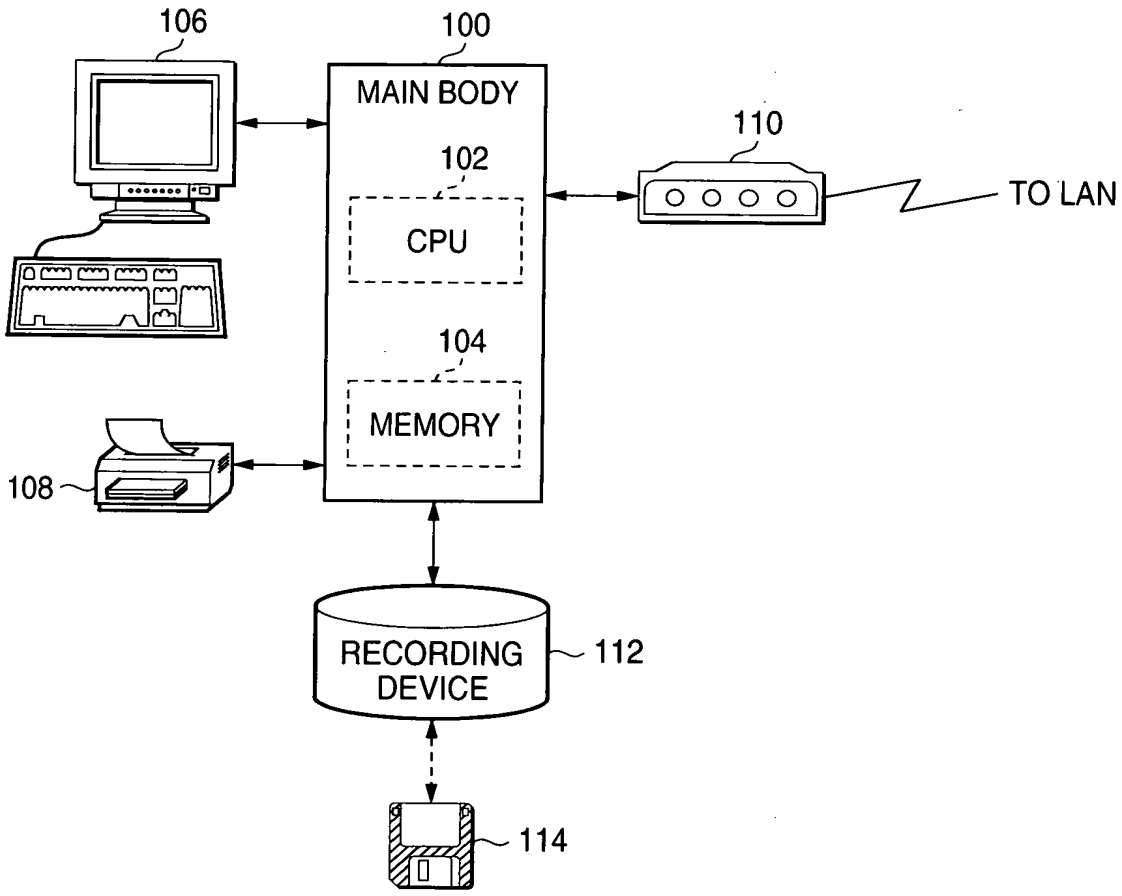


FIG. 2



3, 4, 12, 16, 18

FIG. 3

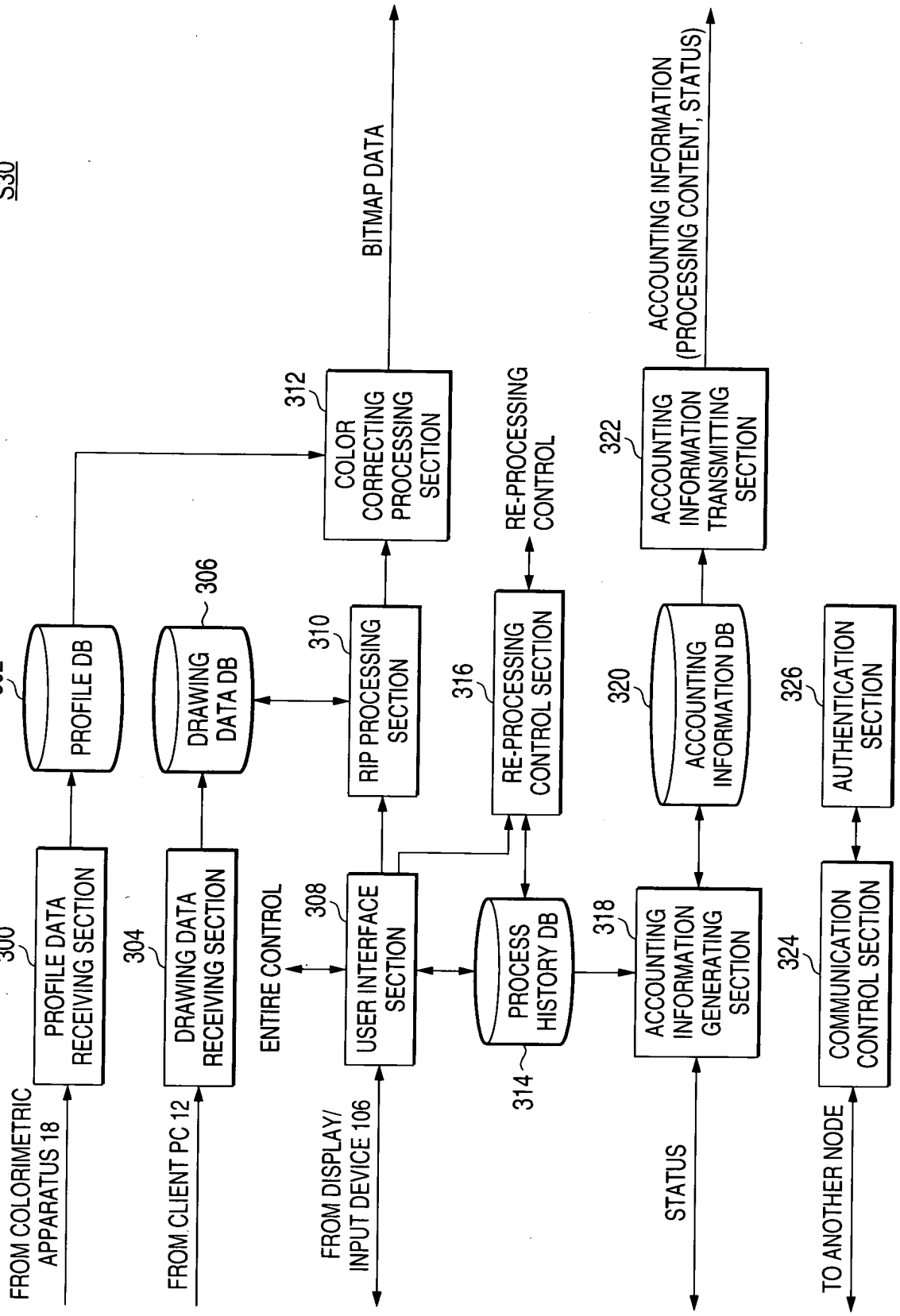

S30
FROM COLORIMETRIC APPARATUS 18
FROM CLIENT PC 12
FROM DISPLAY/ INPUT DEVICE 106
ENTIRE CONTROL
STATUS
TO ANOTHER NODE
300
PROFILE DATA RECEIVING SECTION
302
PROFILE DB
304
DRAWING DATA RECEIVING SECTION
306
DRAWING DATA DB
308
USER INTERFACE SECTION
310
RIP PROCESSING SECTION
312
COLOR CORRECTING PROCESSING SECTION
BITMAP DATA
314
PROCESS HISTORY DB
316
RE-PROCESSING CONTROL SECTION
RE-PROCESSING CONTROL
318
ACCOUNTING INFORMATION GENERATING SECTION
320
ACCOUNTING INFORMATION DB
322
ACCOUNTING INFORMATION TRANSMITTING SECTION
ACCOUNTING INFORMATION (PROCESSING CONTENT, STATUS)
324
COMMUNICATION CONTROL SECTION
326
AUTHENTICATION SECTION

FIG. 4

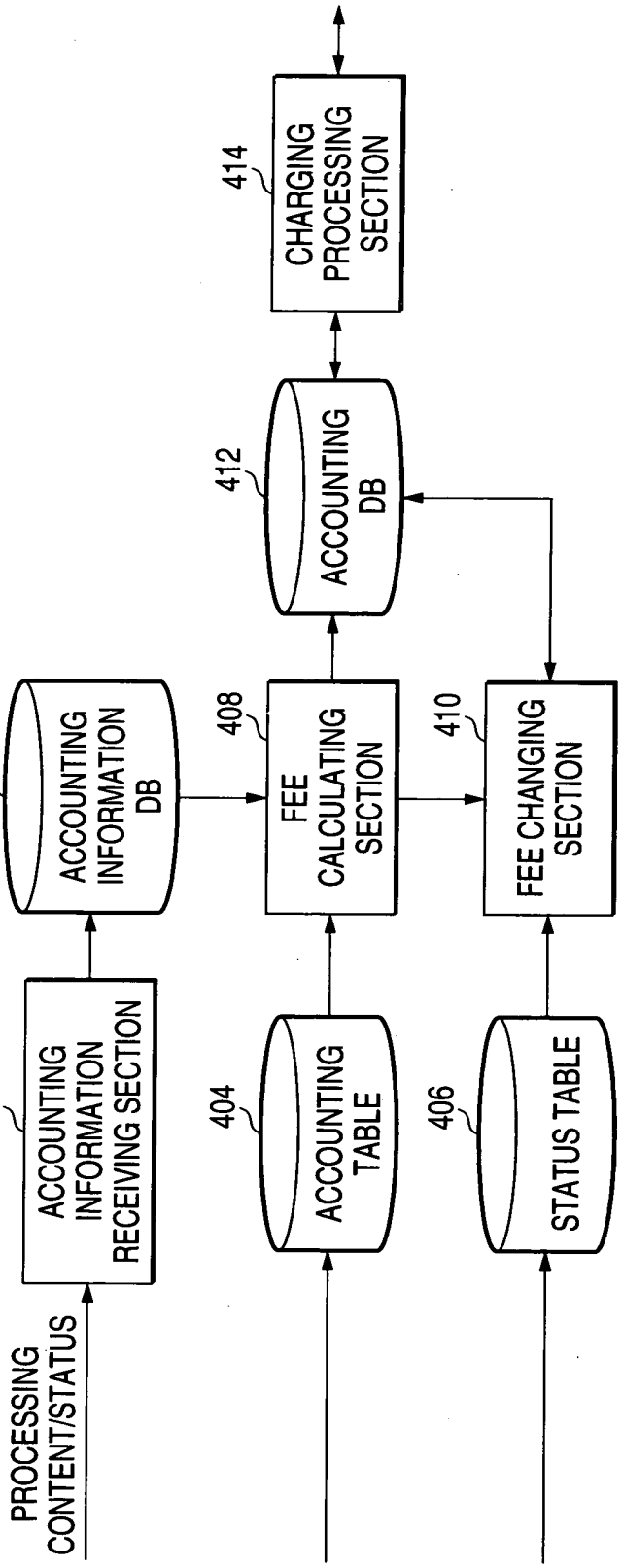

S40
PROCESSING CONTENT/STATUS
400
ACCOUNTING INFORMATION RECEIVING SECTION
402
ACCOUNTING INFORMATION DB
404
ACCOUNTING TABLE
406
STATUS TABLE
408
FEE CALCULATING SECTION
410
FEE CHANGING SECTION
412
ACCOUNTING DB
414
CHARGING PROCESSING SECTION

FIG. 5

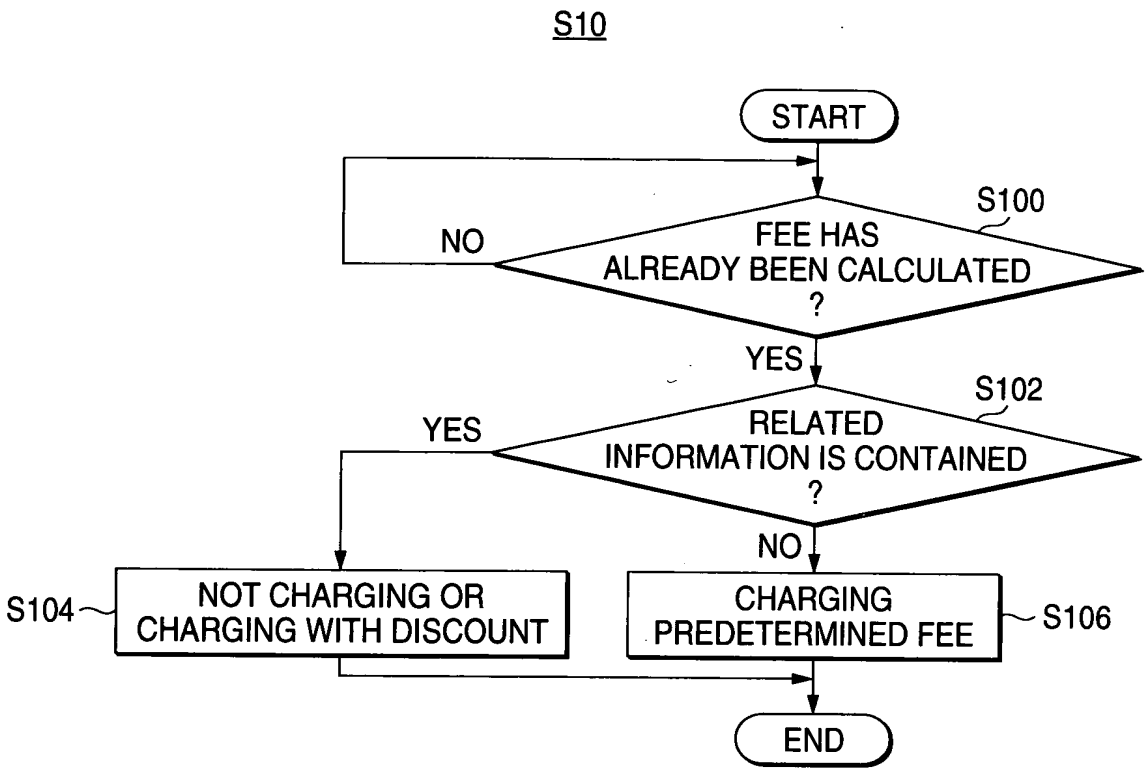

S10
START
S100
FEE HAS ALREADY BEEN CALCULATED ?
NO
YES
S102
RELATED INFORMATION IS CONTAINED ?
YES
NO
S104
NOT CHARGING OR CHARGING WITH DISCOUNT
CHARGING PREDETERMINED FEE
S106
END

FIG. 6

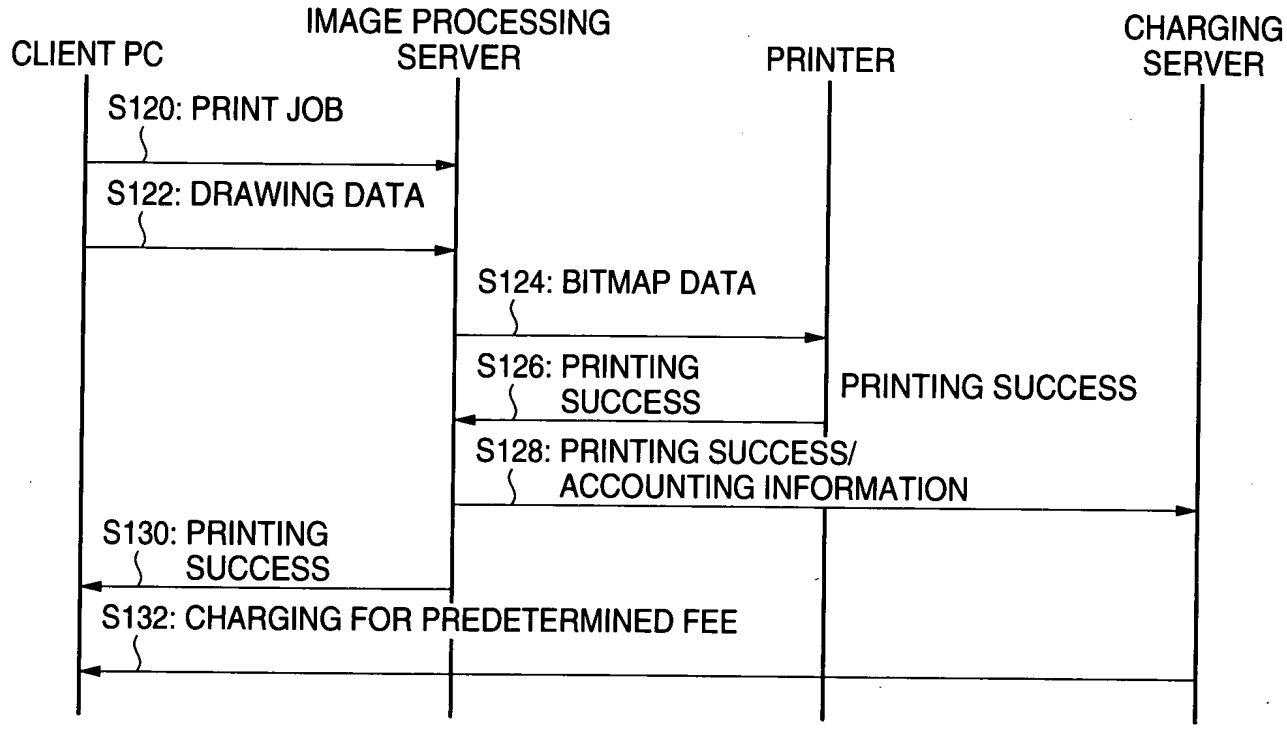

S12
CLIENT PC
IMAGE PROCESSING SERVER
PRINTER
CHARGING SERVER
S120: PRINT JOB
S122: DRAWING DATA
S124: BITMAP DATA
S126: PRINTING SUCCESS
PRINTING SUCCESS
S128: PRINTING SUCCESS/ ACCOUNTING INFORMATION
S130: PRINTING SUCCESS
S132: CHARGING FOR PREDETERMINED FEE

FIG. 7

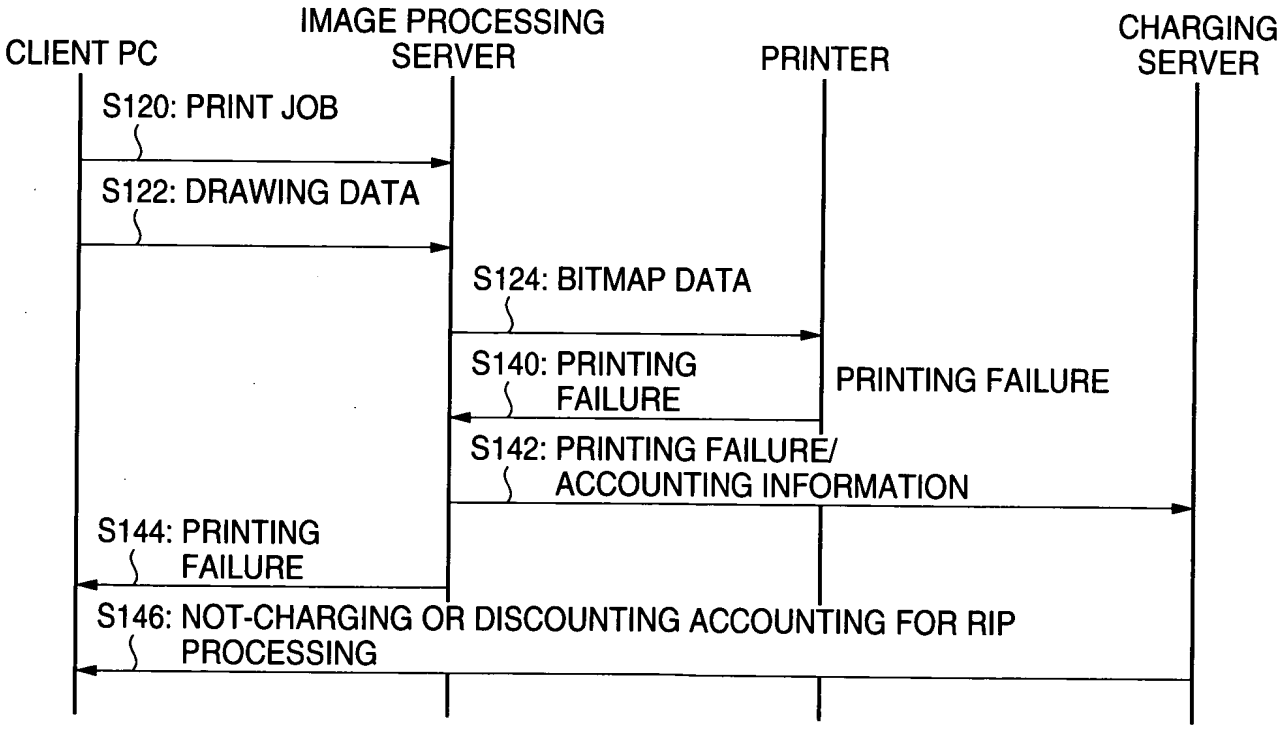

S14
CLIENT PC
IMAGE PROCESSING SERVER
PRINTER
CHARGING SERVER
S120: PRINT JOB
S122: DRAWING DATA
S124: BITMAP DATA
S140: PRINTING FAILURE
PRINTING FAILURE
S142: PRINTING FAILURE/ ACCOUNTING INFORMATION
S144: PRINTING FAILURE
S146: NOT-CHARGING OR DISCOUNTING ACCOUNTING FOR RIP PROCESSING

FIG. 8

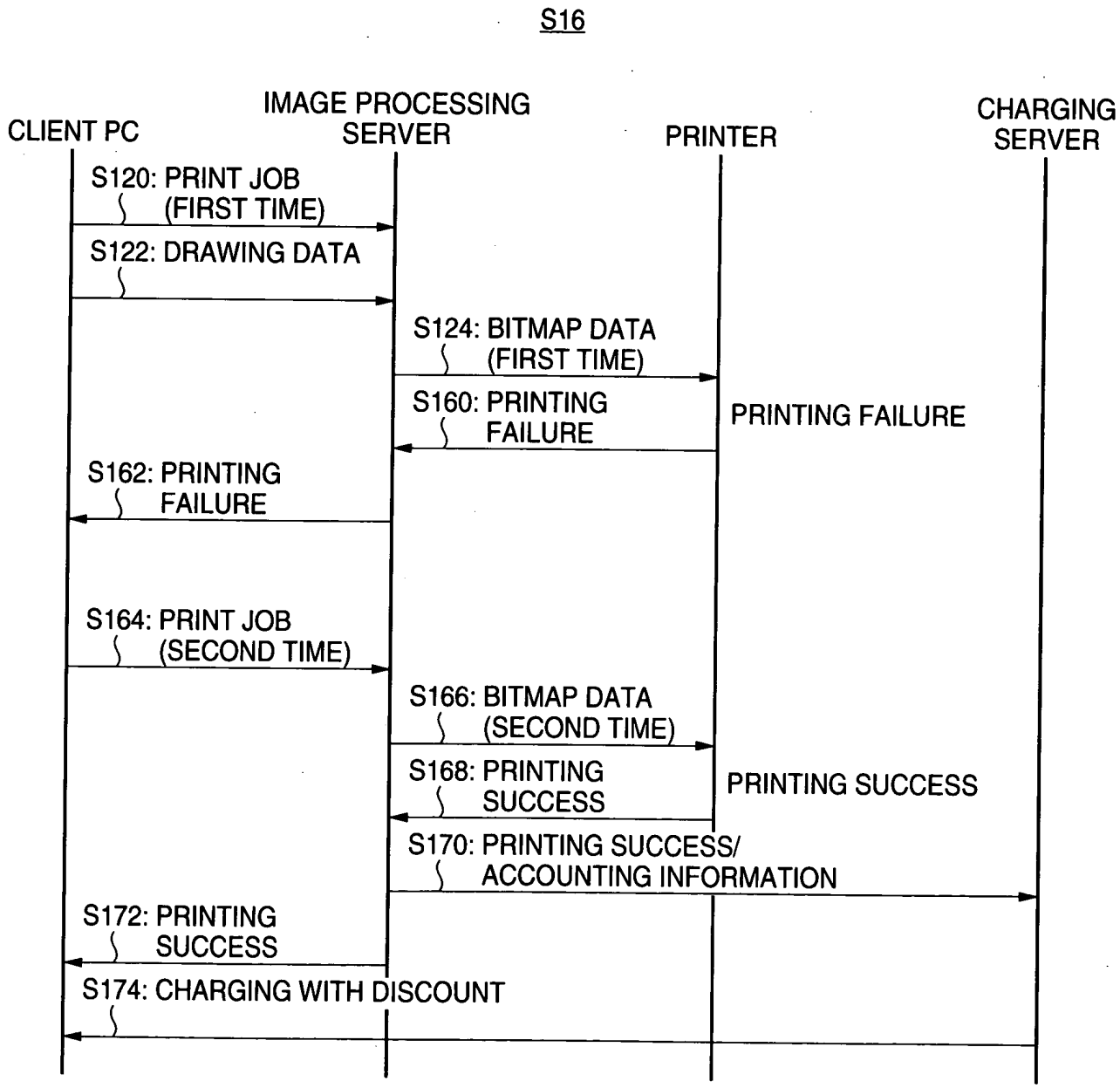

S16
CLIENT PC
IMAGE PROCESSING SERVER
PRINTER
CHARGING SERVER
S120: PRINT JOB (FIRST TIME)
S122: DRAWING DATA
S124: BITMAP DATA (FIRST TIME)
S160: PRINTING FAILURE
PRINTING FAILURE
S162: PRINTING FAILURE
S164: PRINT JOB (SECOND TIME)
S166: BITMAP DATA (SECOND TIME)
S168: PRINTING SUCCESS
PRINTING SUCCESS
S170: PRINTING SUCCESS/ ACCOUNTING INFORMATION
S172: PRINTING SUCCESS
S174: CHARGING WITH DISCOUNT

FIG. 9

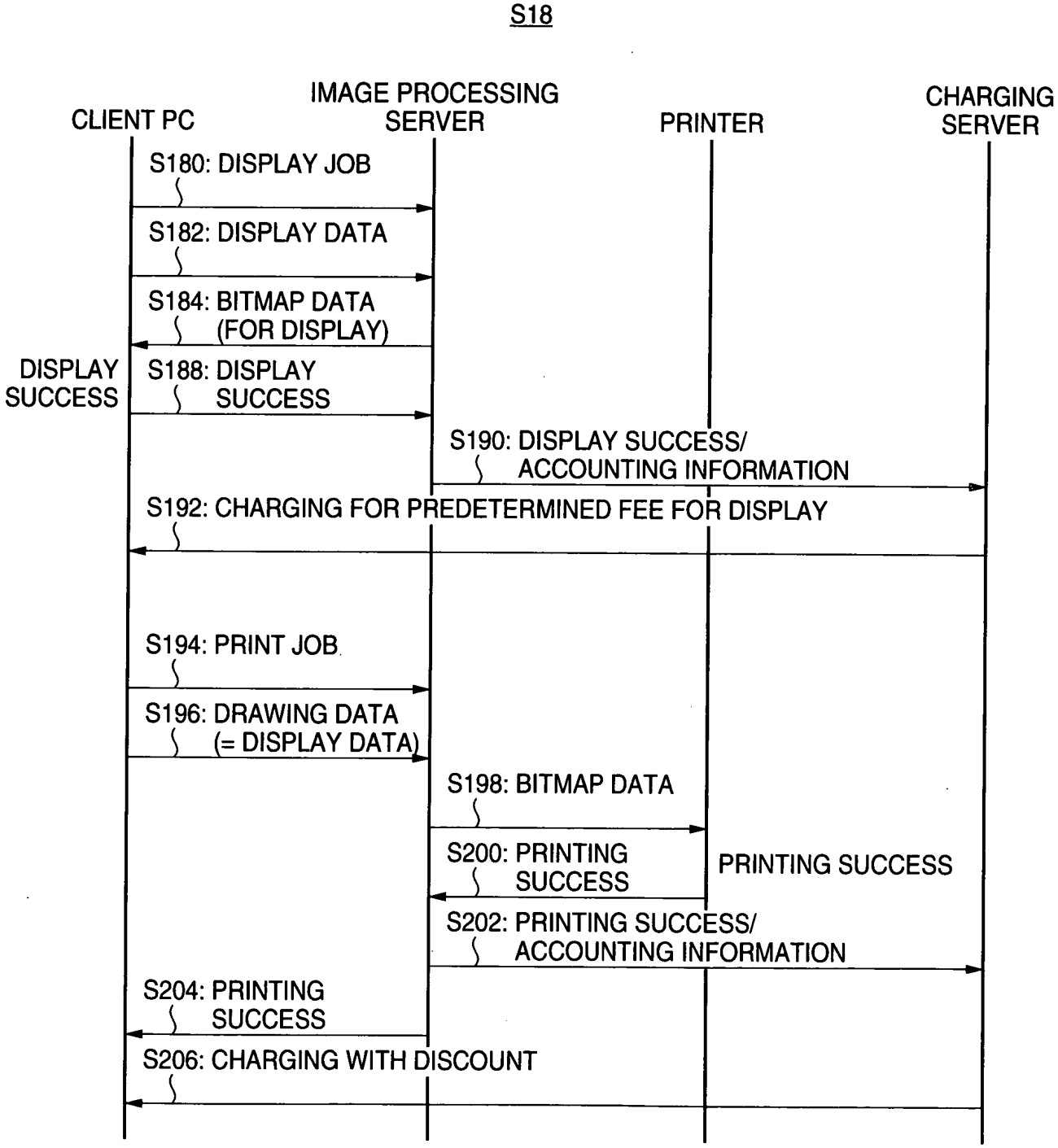

S18
CLIENT PC
IMAGE PROCESSING SERVER
PRINTER
CHARGING SERVER
S180: DISPLAY JOB
S182: DISPLAY DATA
S184: BITMAP DATA (FOR DISPLAY)
DISPLAY SUCCESS
S188: DISPLAY SUCCESS
S190: DISPLAY SUCCESS/ ACCOUNTING INFORMATION
S192: CHARGING FOR PREDETERMINED FEE FOR DISPLAY
S194: PRINT JOB
S196: DRAWING DATA (= DISPLAY DATA)
S198: BITMAP DATA
S200: PRINTING SUCCESS
PRINTING SUCCESS
S202: PRINTING SUCCESS/ ACCOUNTING INFORMATION
S204: PRINTING SUCCESS
S206: CHARGING WITH DISCOUNT

FIG. 10

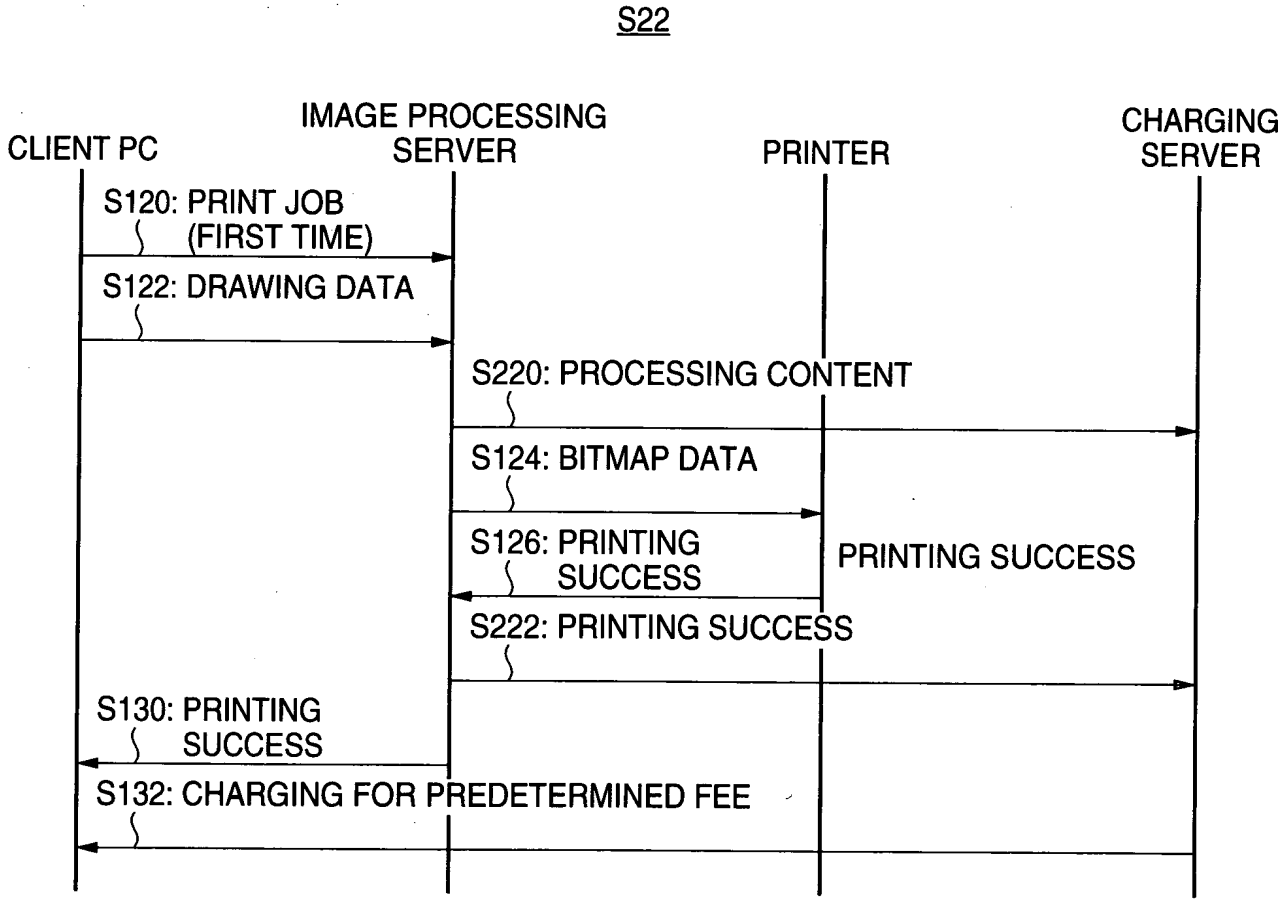

S22
CLIENT PC
IMAGE PROCESSING SERVER
PRINTER
CHARGING SERVER
S120: PRINT JOB (FIRST TIME)
S122: DRAWING DATA
S220: PROCESSING CONTENT
S124: BITMAP DATA
S126: PRINTING SUCCESS
PRINTING SUCCESS
S222: PRINTING SUCCESS
S130: PRINTING SUCCESS
S132: CHARGING FOR PREDETERMINED FEE

FIG. 11

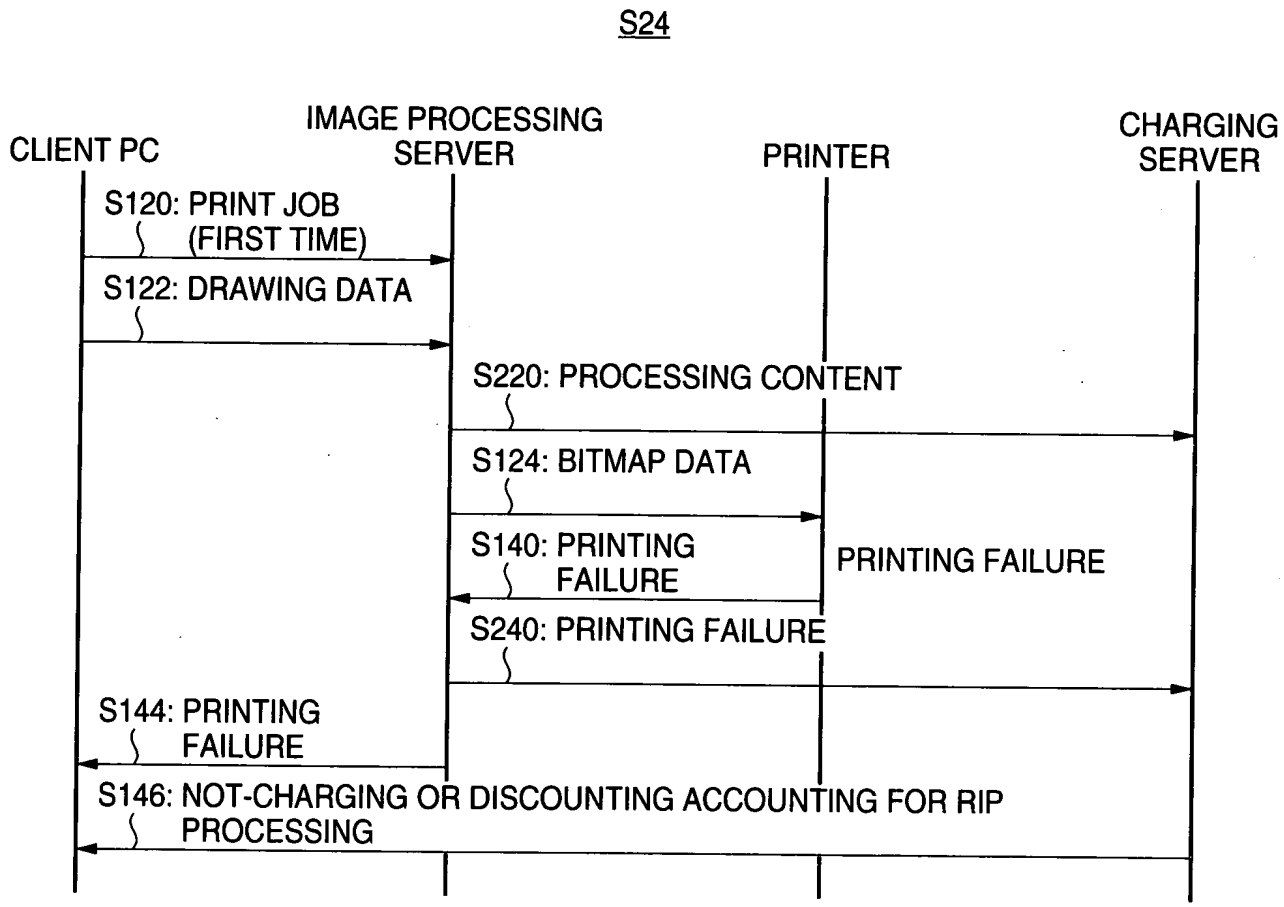

S24
CLIENT PC
IMAGE PROCESSING SERVER
PRINTER
CHARGING SERVER
S120: PRINT JOB (FIRST TIME)
S122: DRAWING DATA
S220: PROCESSING CONTENT
S124: BITMAP DATA
S140: PRINTING FAILURE
PRINTING FAILURE
S240: PRINTING FAILURE
S144: PRINTING FAILURE
S146: NOT-CHARGING OR DISCOUNTING ACCOUNTING FOR RIP PROCESSING

FIG. 12

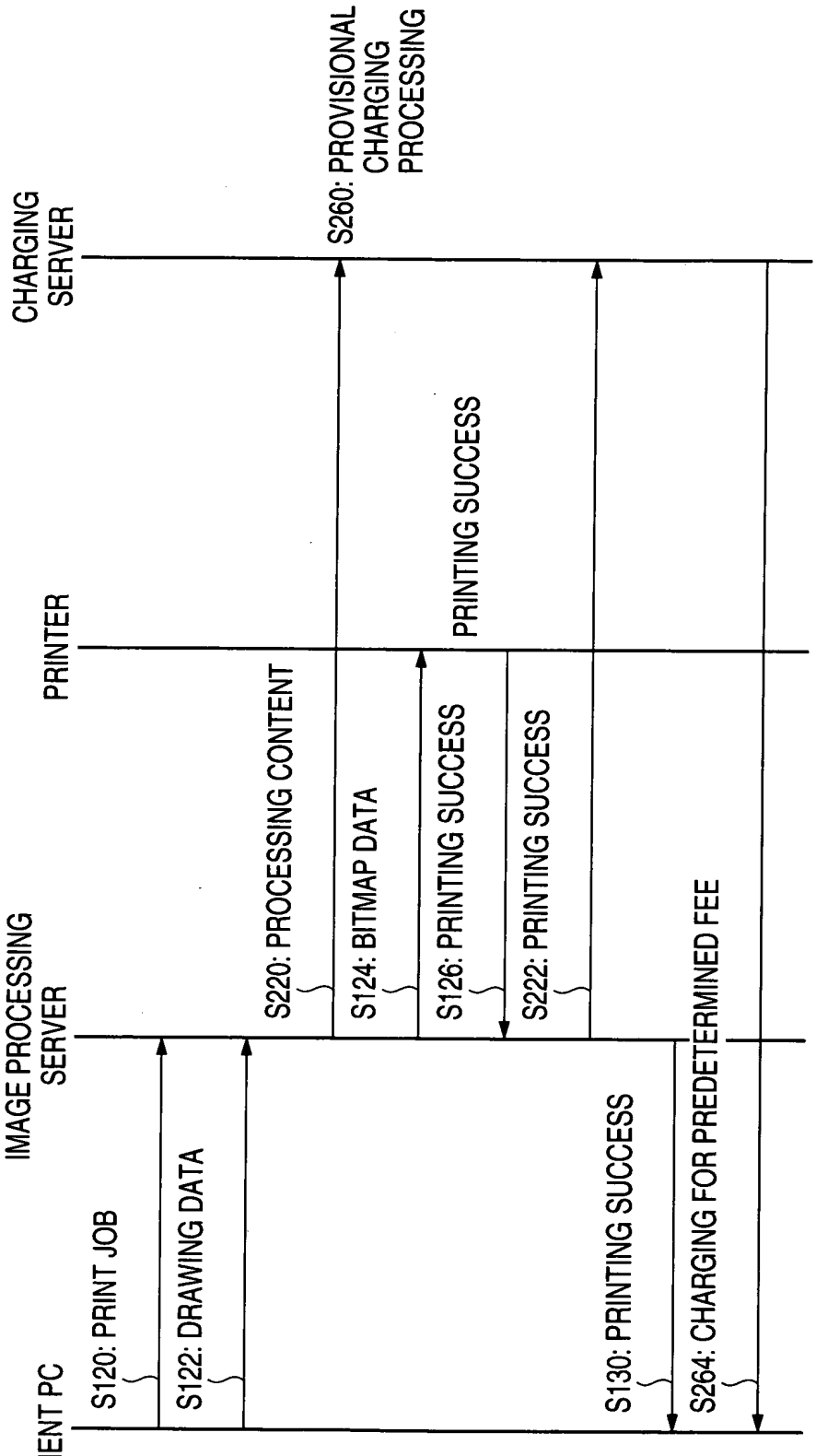

S26
CLIENT PC
IMAGE PROCESSING SERVER
PRINTER
CHARGING SERVER
S120: PRINT JOB
S122: DRAWING DATA
S220: PROCESSING CONTENT
S124: BITMAP DATA
S126: PRINTING SUCCESS
PRINTING SUCCESS
S222: PRINTING SUCCESS
S260: PROVISIONAL CHARGING PROCESSING
S130: PRINTING SUCCESS
S264: CHARGING FOR PREDETERMINED FEE

FIG. 13

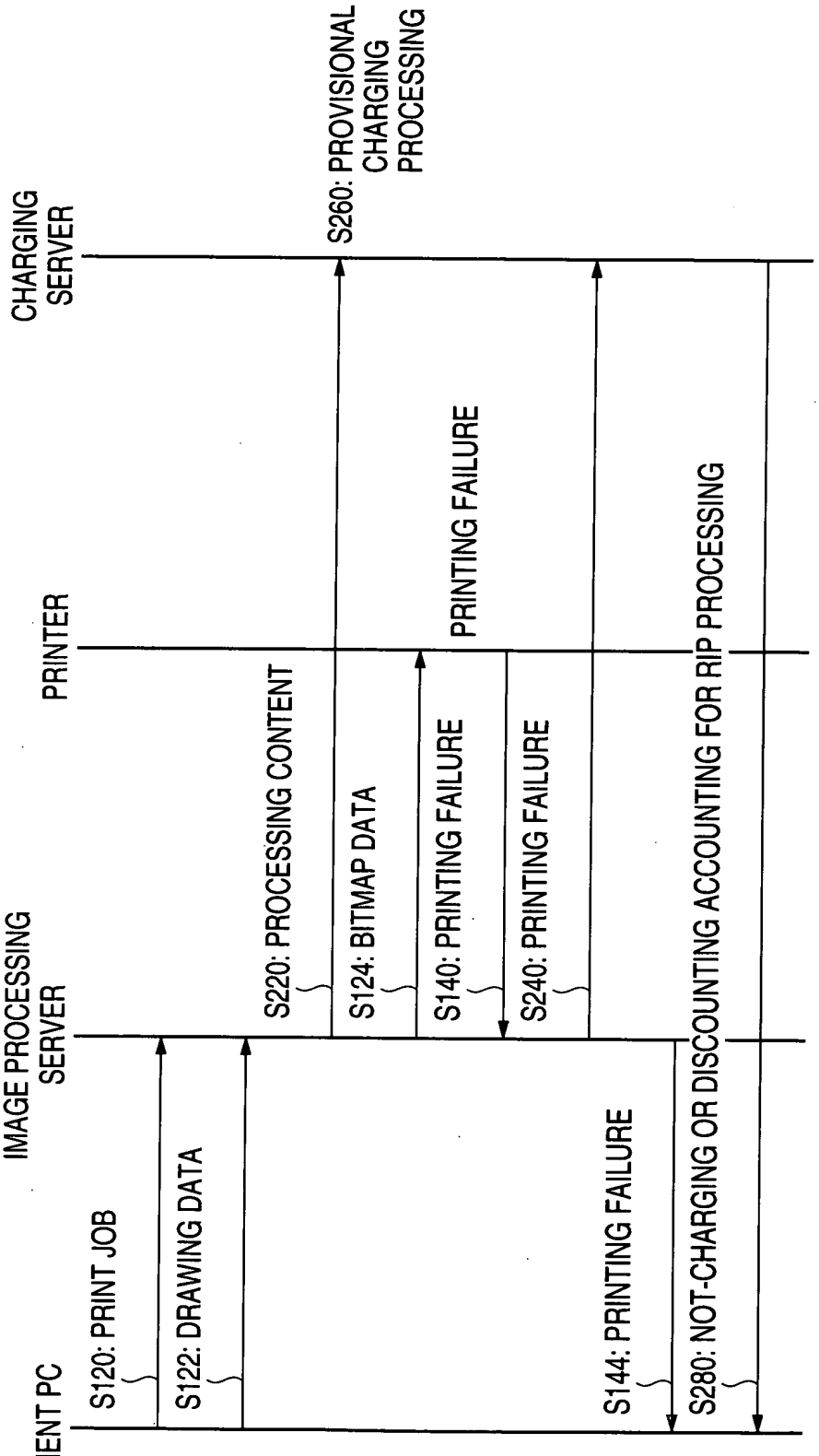

S28
CLIENT PC
IMAGE PROCESSING SERVER
PRINTER
CHARGING SERVER
S120: PRINT JOB
S122: DRAWING DATA
S220: PROCESSING CONTENT
S124: BITMAP DATA
S140: PRINTING FAILURE
S240: PRINTING FAILURE
S260: PROVISIONAL CHARGING PROCESSING
PRINTING FAILURE
S144: PRINTING FAILURE
S280: NOT-CHARGING OR DISCOUNTING ACCOUNTING FOR RIP PROCESSING

FIG. 14

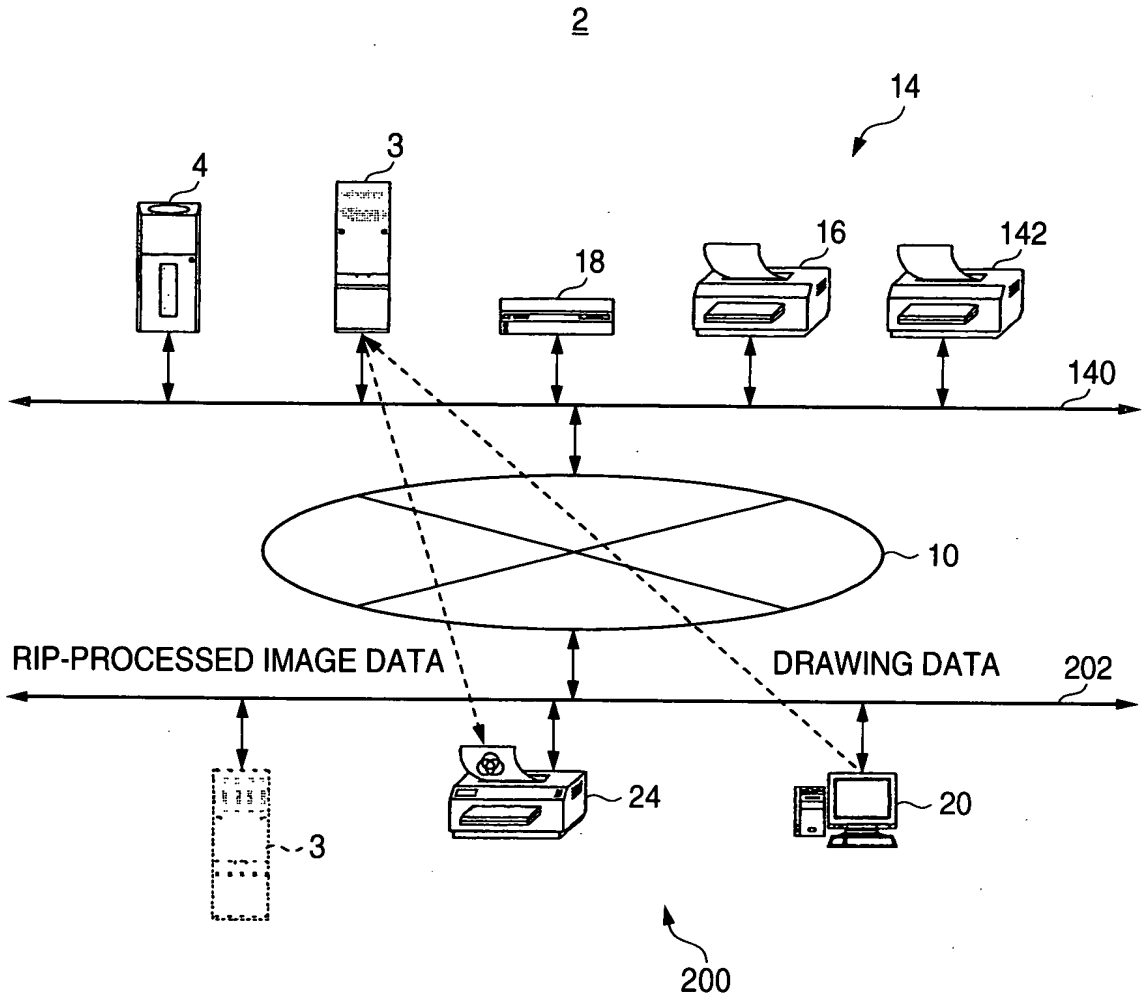

2
14
4
3
18
16
142
140
10
RIP-PROCESSED IMAGE DATA
DRAWING DATA
202
3
24
20
200

FIG. 15

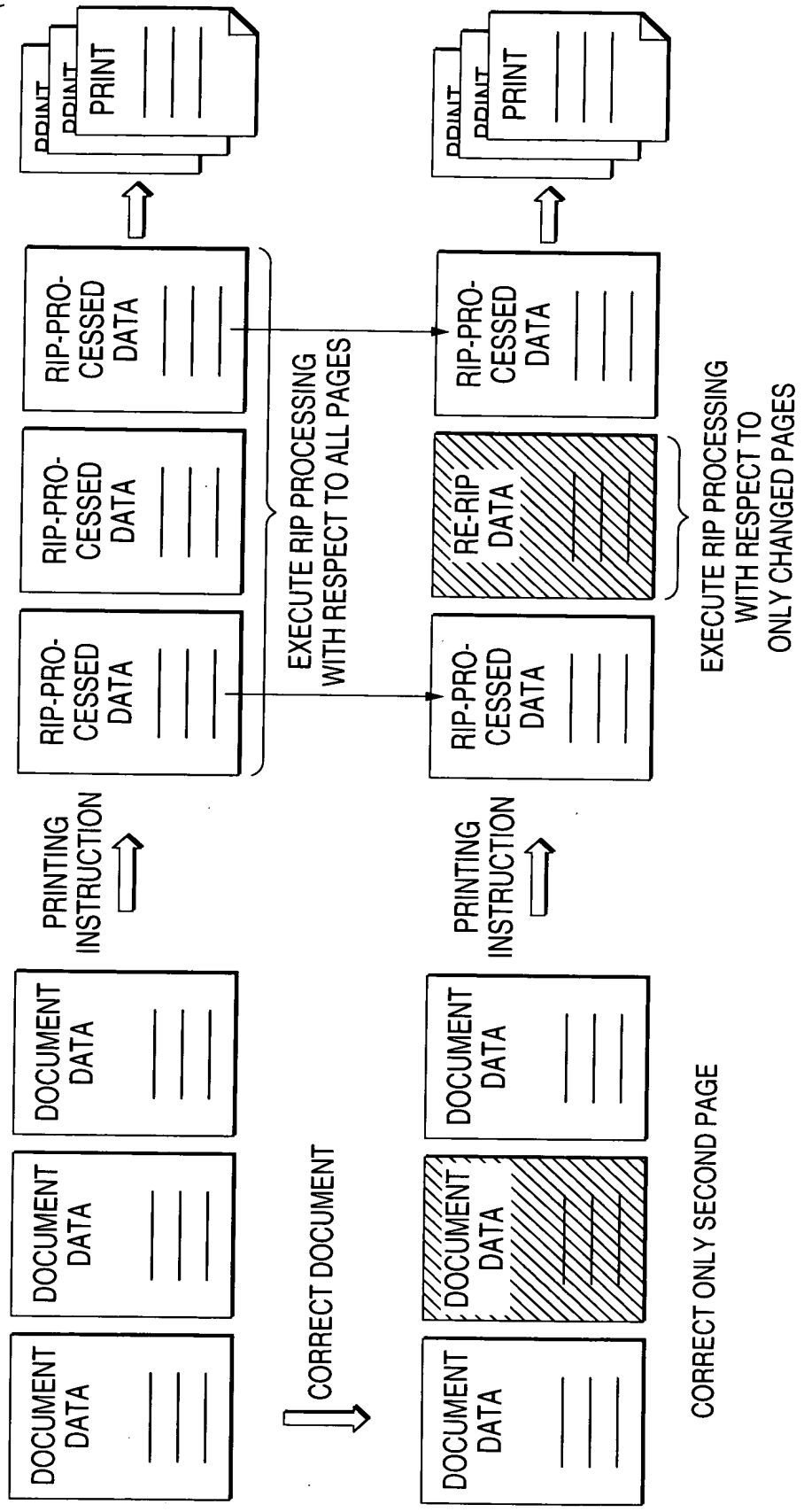

DOCUMENT DATA
DOCUMENT DATA
DOCUMENT DATA
PRINTING INSTRUCTION
RIP-PROCESSED DATA
RIP-PROCESSED DATA
RIP-PROCESSED DATA
PRINT
EXECUTE RIP PROCESSING WITH RESPECT TO ALL PAGES
CORRECT DOCUMENT
DOCUMENT DATA
DOCUMENT DATA
DOCUMENT DATA
PRINTING INSTRUCTION
RIP-PROCESSED DATA
RE-RIP DATA
RIP-PROCESSED DATA
PRINT
EXECUTE RIP PROCESSING WITH RESPECT TO ONLY CHANGED PAGES
CORRECT ONLY SECOND PAGE

FIG. 16

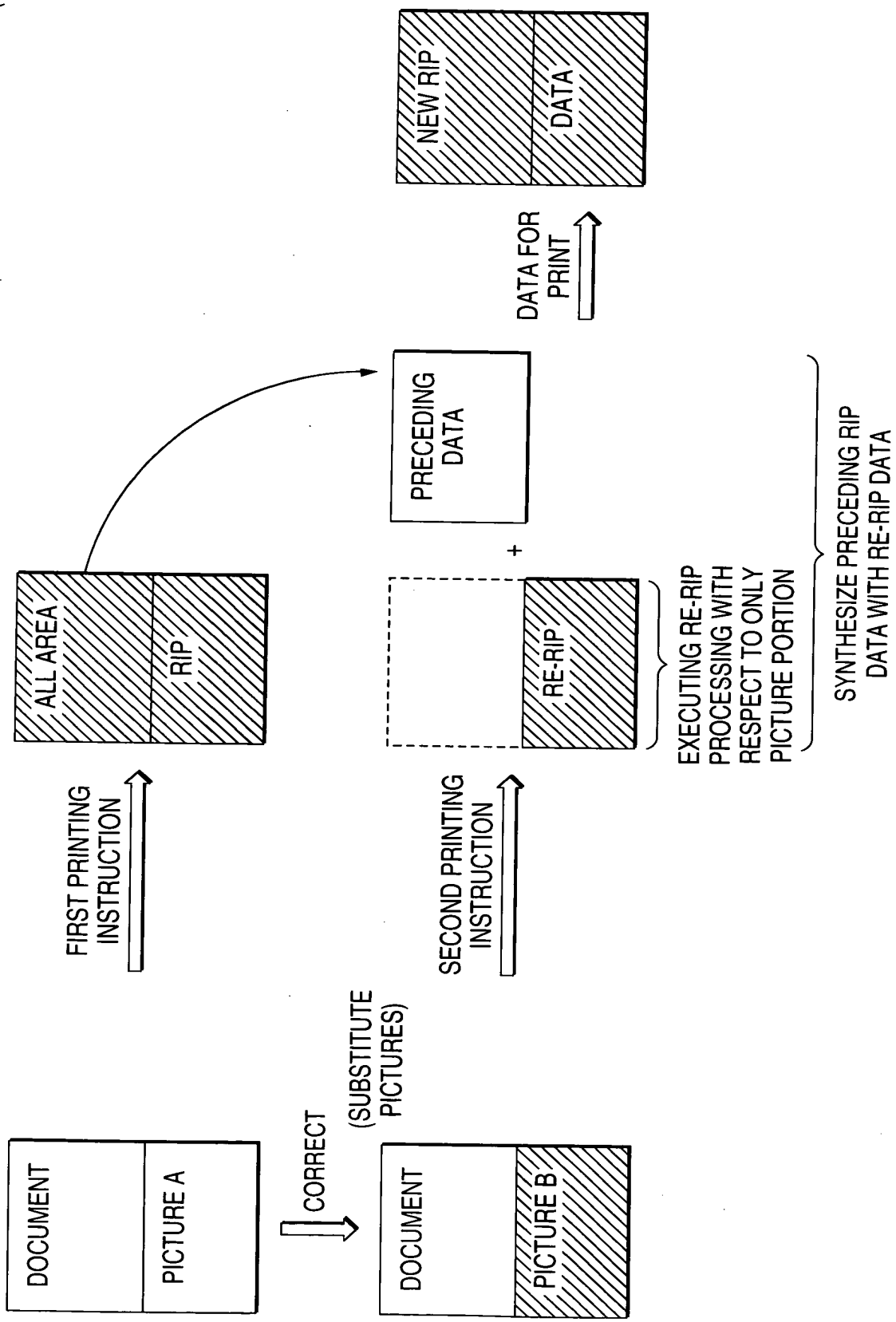

DOCUMENT
PICTURE A
CORRECT
(SUBSTITUTE PICTURES)
DOCUMENT
PICTURE B
FIRST PRINTING INSTRUCTION
ALL AREA
RIP
SECOND PRINTING INSTRUCTION
RE-RIP
+
PRECEDING DATA
EXECUTING RE-RIP PROCESSING WITH RESPECT TO ONLY PICTURE PORTION
SYNTHESIZE PRECEDING RIP DATA WITH RE-RIP DATA
DATA FOR PRINT
NEW RIP
DATA

FIG. 17

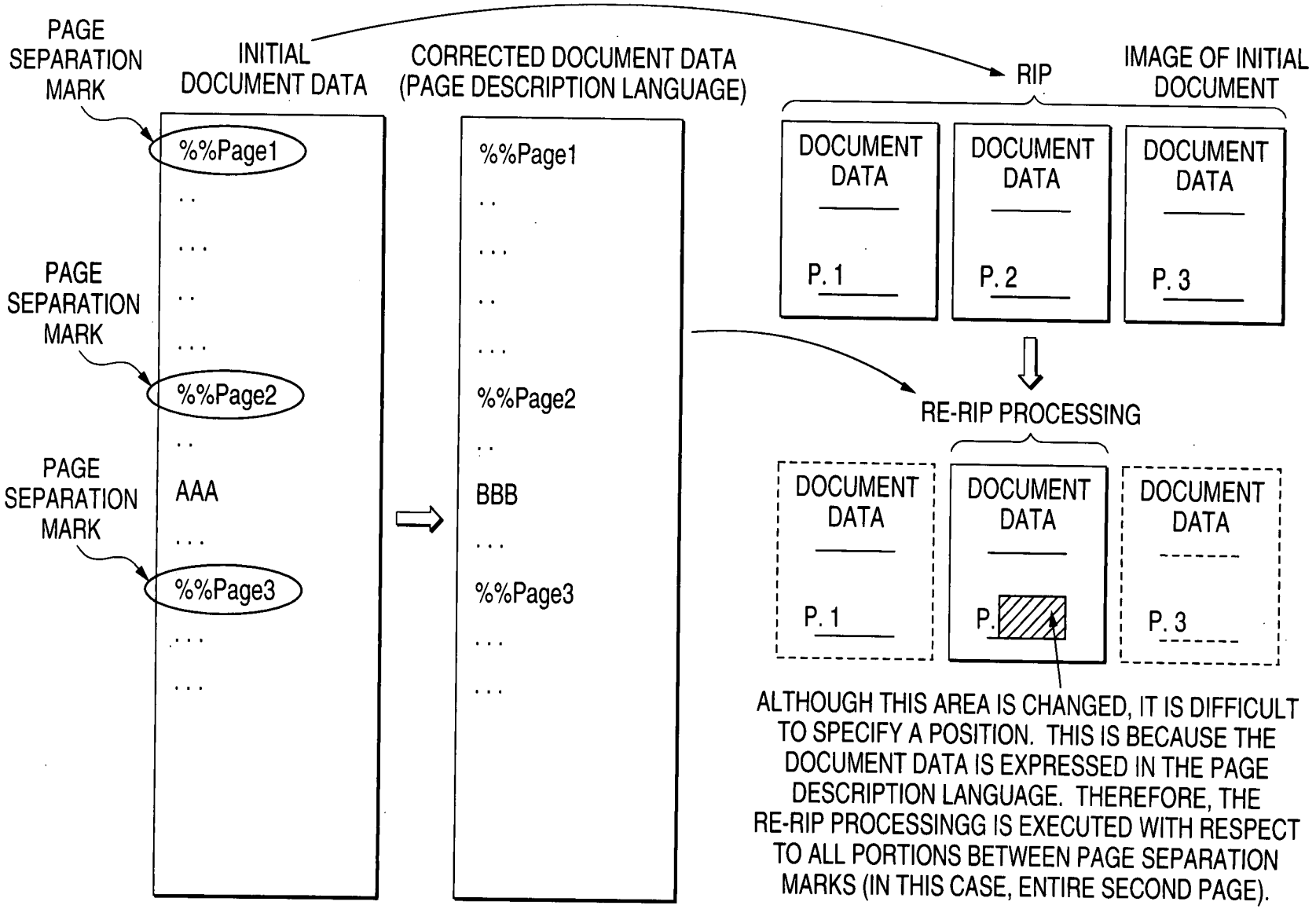

PAGE SEPARATION MARK
INITIAL DOCUMENT DATA
CORRECTED DOCUMENT DATA (PAGE DESCRIPTION LANGUAGE)
RIP
IMAGE OF INITIAL DOCUMENT
%%Page1
PAGE SEPARATION MARK
%%Page2
PAGE SEPARATION MARK
AAA
%%Page3
BBB
DOCUMENT DATA
P. 1
P. 2
P. 3
RE-RIP PROCESSING
ALTHOUGH THIS AREA IS CHANGED, IT IS DIFFICULT TO SPECIFY A POSITION. THIS IS BECAUSE THE DOCUMENT DATA IS EXPRESSED IN THE PAGE DESCRIPTION LANGUAGE. THEREFORE, THE RE-RIP PROCESSINGG IS EXECUTED WITH RESPECT TO ALL PORTIONS BETWEEN PAGE SEPARATION MARKS (IN THIS CASE, ENTIRE SECOND PAGE).

FIG. 18

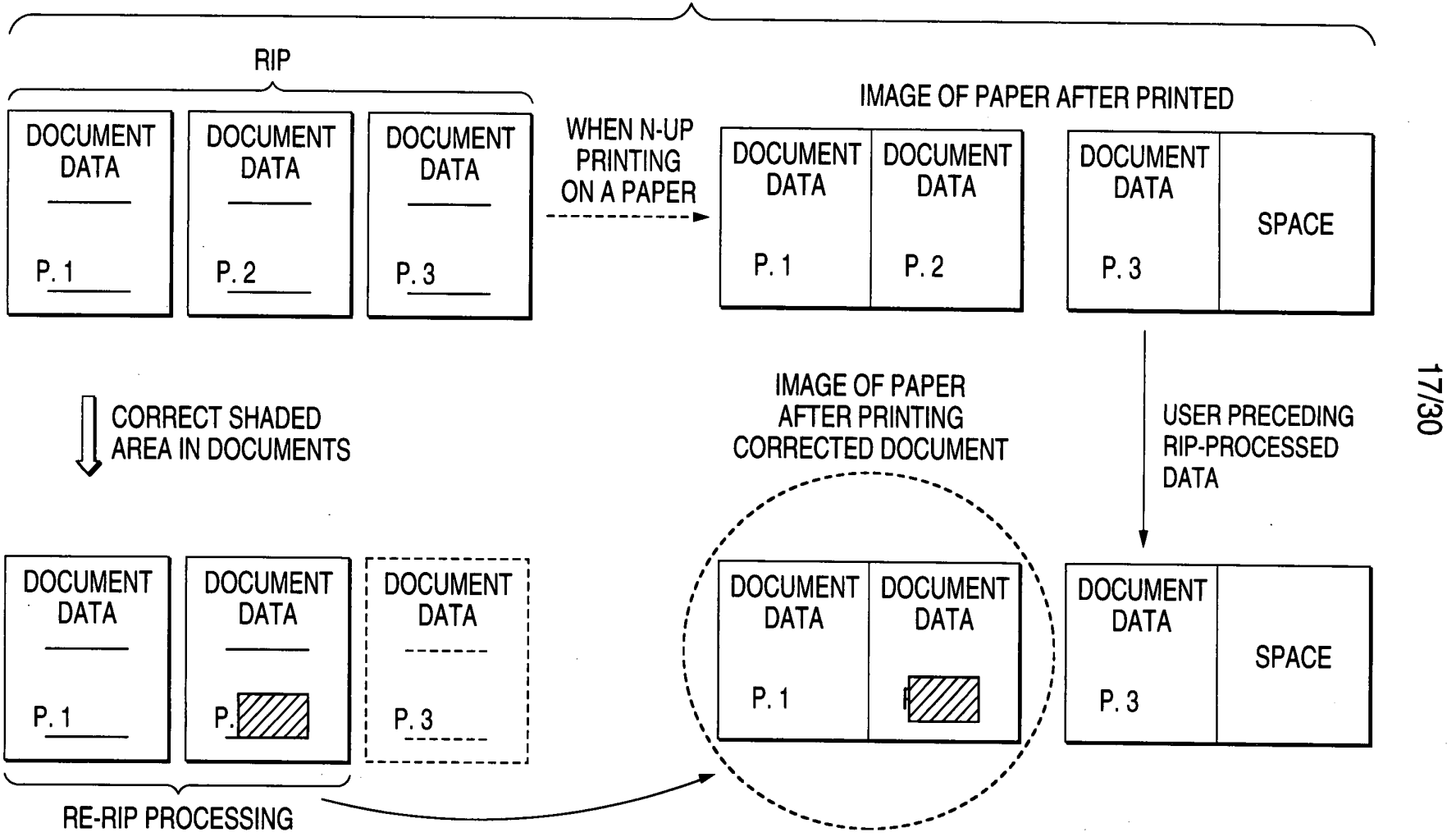

RIP
DOCUMENT DATA
P. 1
DOCUMENT DATA
P. 2
DOCUMENT DATA
P. 3
WHEN N-UP PRINTING ON A PAPER
IMAGE OF PAPER AFTER PRINTED
DOCUMENT DATA
P. 1
DOCUMENT DATA
P. 2
DOCUMENT DATA
P. 3
SPACE
CORRECT SHADED AREA IN DOCUMENTS
IMAGE OF PAPER AFTER PRINTING CORRECTED DOCUMENT
USER PRECEDING RIP-PROCESSED DATA
DOCUMENT DATA
P. 1
DOCUMENT DATA
P.
DOCUMENT DATA
P. 3
RE-RIP PROCESSING
DOCUMENT DATA
P. 1
DOCUMENT DATA
DOCUMENT DATA
P. 3
SPACE

FIG. 19

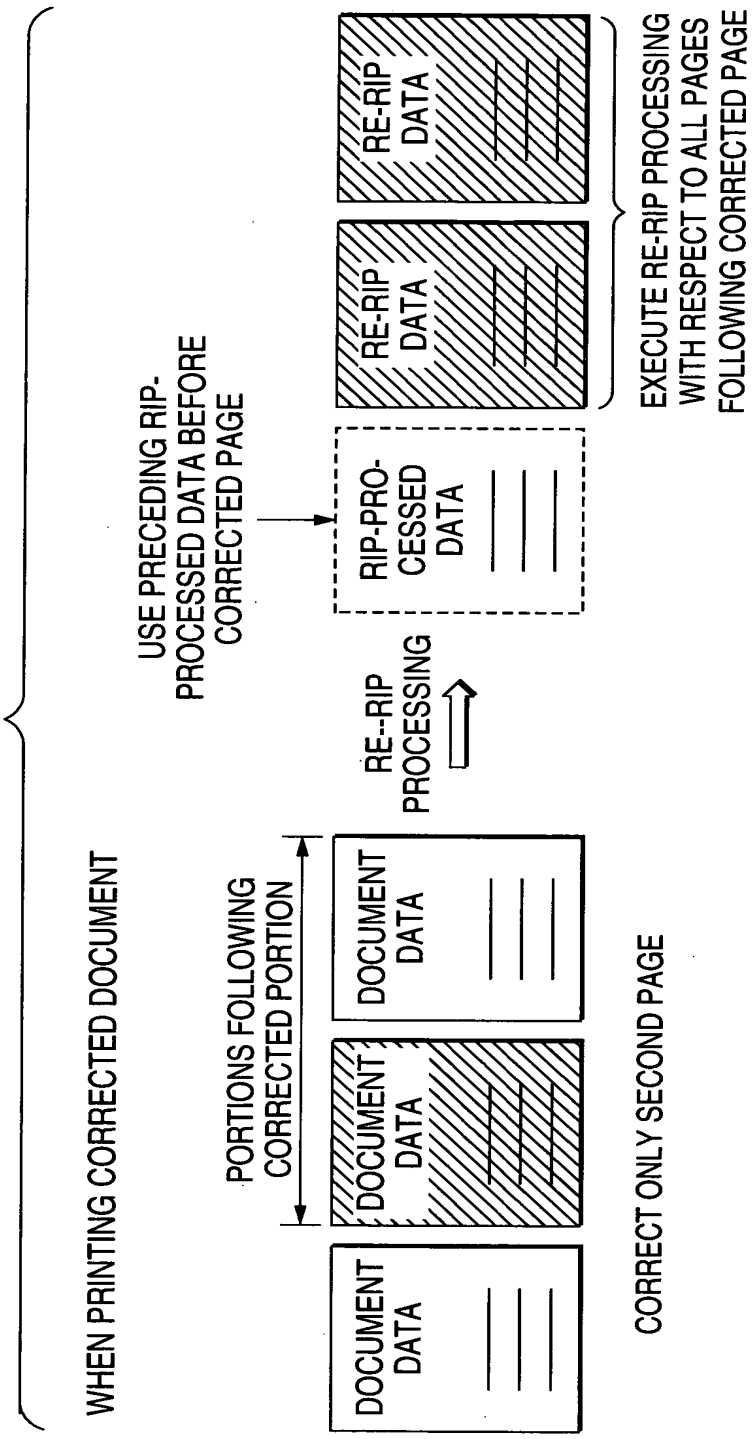

WHEN PRINTING CORRECTED DOCUMENT
DOCUMENT DATA
DOCUMENT DATA
PORTIONS FOLLOWING CORRECTED PORTION
DOCUMENT DATA
CORRECT ONLY SECOND PAGE
RE-RIP PROCESSING
USE PRECEDING RIP-PROCESSED DATA BEFORE CORRECTED PAGE
RIP-PROCESSED DATA
RE-RIP DATA
RE-RIP DATA
RE-RIP DATA
EXECUTE RE-RIP PROCESSING WITH RESPECT TO ALL PAGES FOLLOWING CORRECTED PAGE

FIG. 20

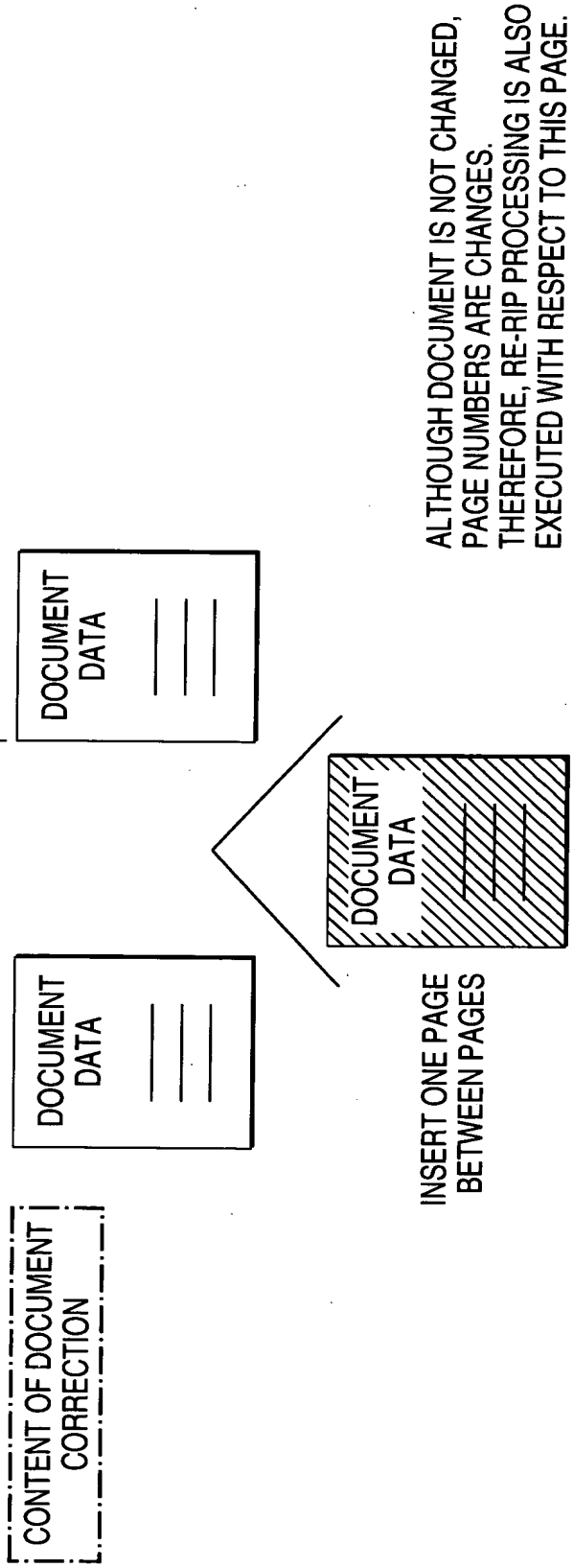

CONTENT OF DOCUMENT CORRECTION
DOCUMENT DATA
INSERT ONE PAGE BETWEEN PAGES
DOCUMENT DATA
ALTHOUGH DOCUMENT IS NOT CHANGED, PAGE NUMBERS ARE CHANGES. THEREFORE, RE-RIP PROCESSING IS ALSO EXECUTED WITH RESPECT TO THIS PAGE.
DOCUMENT DATA
AFTER HERE, INSERTION CAUSES PAGE NUMBERS TO BE DIFFERENT FROM THOSE AT A TIME OF PRECEDING PRINTING.

FIG. 21

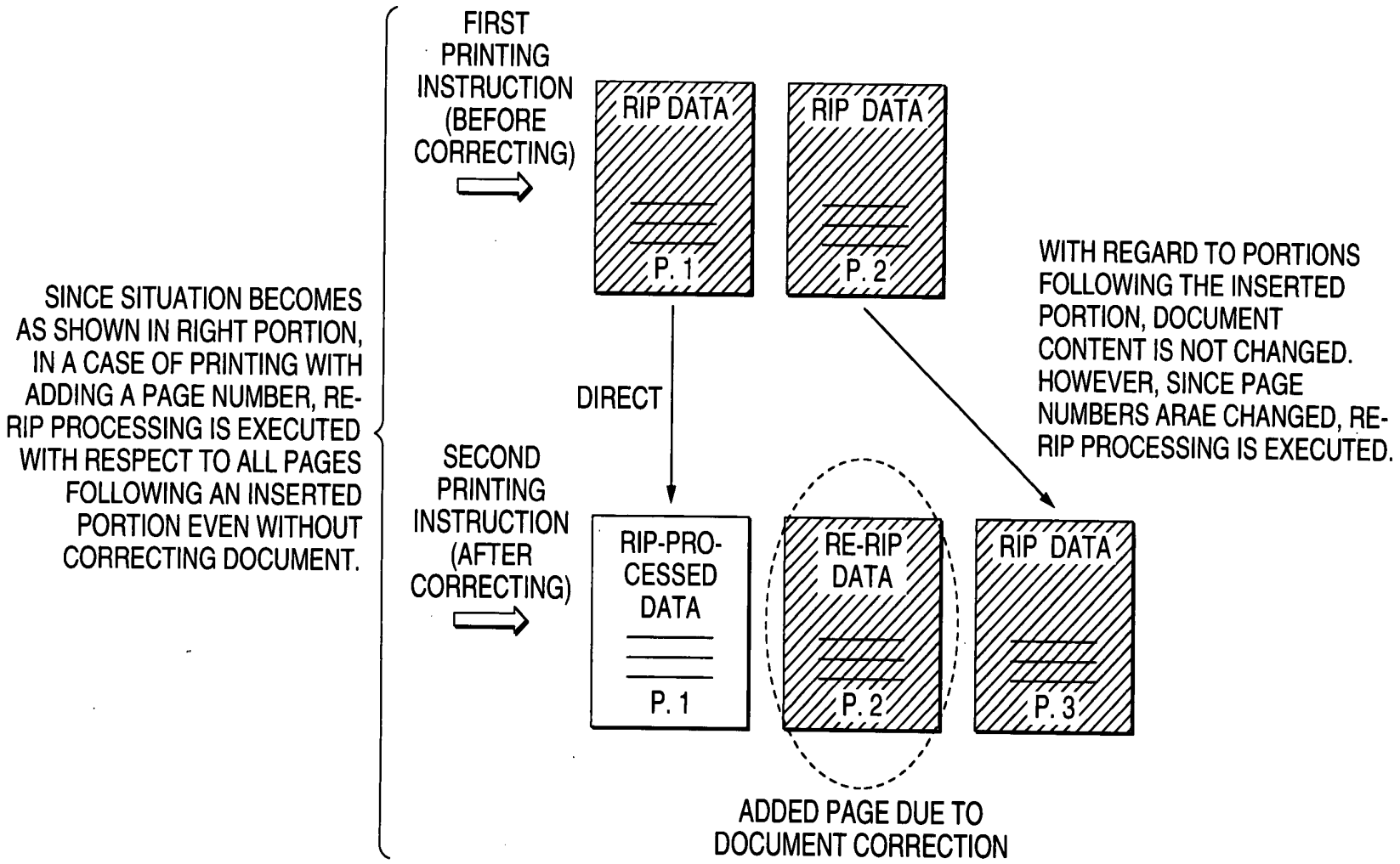

FIRST PRINTING INSTRUCTION (BEFORE CORRECTING)
RIP DATA
P. 1
RIP DATA
P. 2
WITH REGARD TO PORTIONS FOLLOWING THE INSERTED PORTION, DOCUMENT CONTENT IS NOT CHANGED. HOWEVER, SINCE PAGE NUMBERS ARAE CHANGED, RE-RIP PROCESSING IS EXECUTED.
SINCE SITUATION BECOMES AS SHOWN IN RIGHT PORTION, IN A CASE OF PRINTING WITH ADDING A PAGE NUMBER, RE-RIP PROCESSING IS EXECUTED WITH RESPECT TO ALL PAGES FOLLOWING AN INSERTED PORTION EVEN WITHOUT CORRECTING DOCUMENT.
DIRECT
SECOND PRINTING INSTRUCTION (AFTER CORRECTING)
RIP-PRO-CESSED DATA
P. 1
RE-RIP DATA
P. 2
RIP DATA
P. 3
ADDED PAGE DUE TO DOCUMENT CORRECTION

FIG. 22

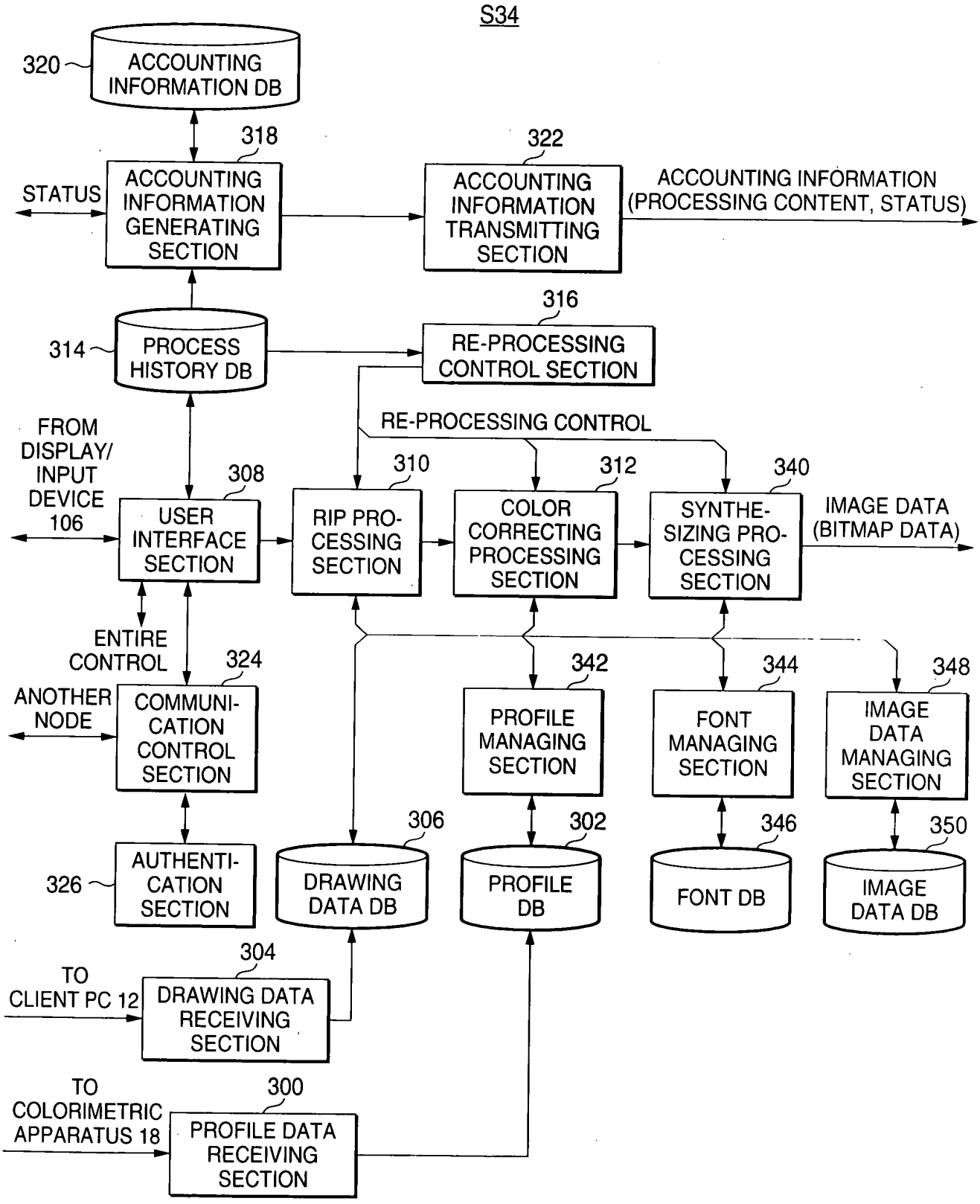

S34
320
ACCOUNTING INFORMATION DB
318
322
STATUS
ACCOUNTING INFORMATION GENERATING SECTION
ACCOUNTING INFORMATION TRANSMITTING SECTION
ACCOUNTING INFORMATION (PROCESSING CONTENT, STATUS)
316
314
PROCESS HISTORY DB
RE-PROCESSING CONTROL SECTION
RE-PROCESSING CONTROL
FROM DISPLAY/ INPUT DEVICE 106
308
310
312
340
USER INTERFACE SECTION
RIP PRO-CESSING SECTION
COLOR CORRECTING PROCESSING SECTION
SYNTHE-SIZING PRO-CESSING SECTION
IMAGE DATA (BITMAP DATA)
ENTIRE CONTROL
324
342
344
348
ANOTHER NODE
COMMUNI-CATION CONTROL SECTION
PROFILE MANAGING SECTION
FONT MANAGING SECTION
IMAGE DATA MANAGING SECTION
306
302
346
350
326
AUTHENTI-CATION SECTION
DRAWING DATA DB
PROFILE DB
FONT DB
IMAGE DATA DB
304
TO CLIENT PC 12
DRAWING DATA RECEIVING SECTION
TO COLORIMETRIC APPARATUS 18
300
PROFILE DATA RECEIVING SECTION

FIG. 23

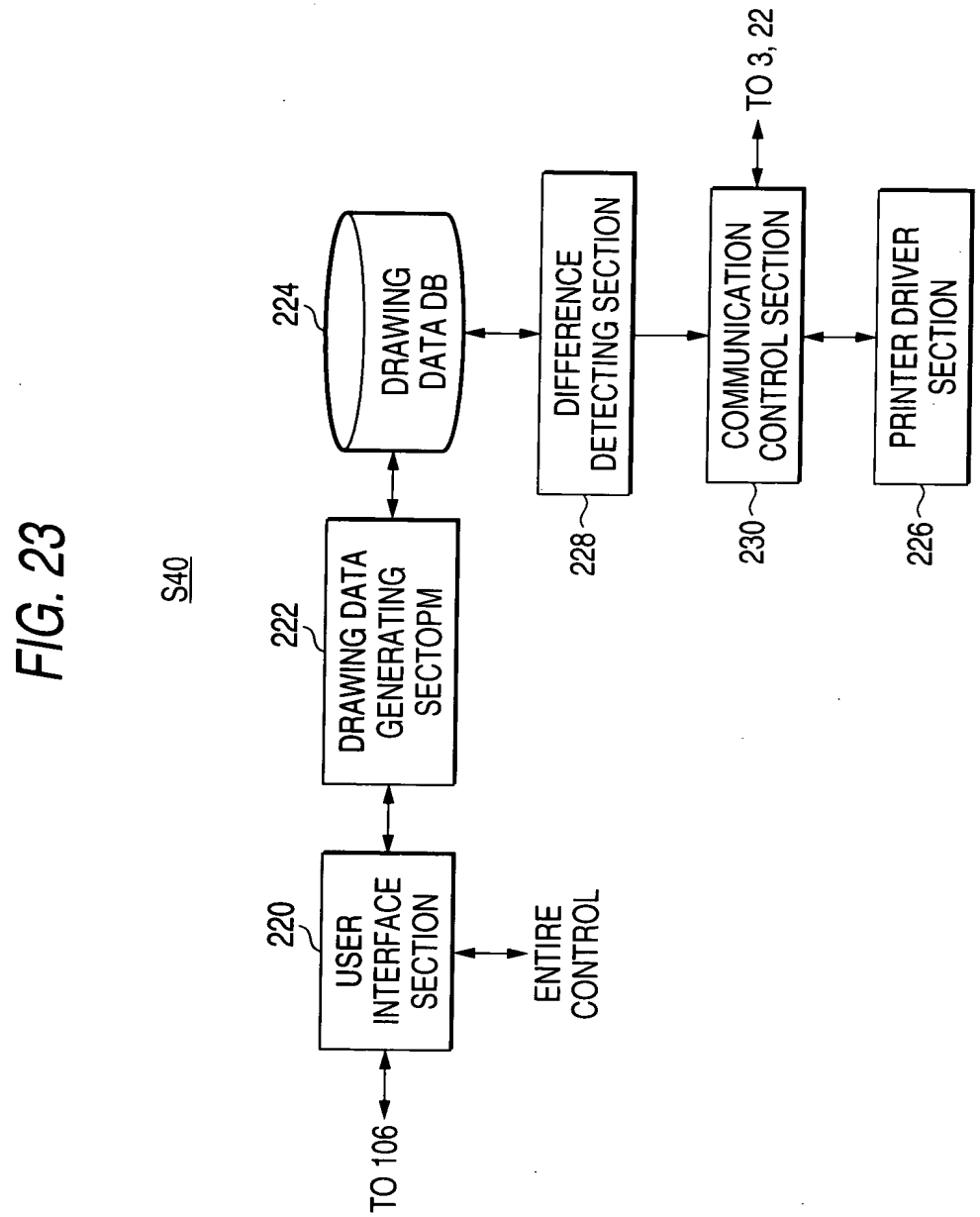

S40
220
USER INTERFACE SECTION
ENTIRE CONTROL
TO 106
222
DRAWING DATA GENERATING SECTOPM
224
DRAWING DATA DB
228
DIFFERENCE DETECTING SECTION
230
COMMUNICATION CONTROL SECTION
TO 3, 22
226
PRINTER DRIVER SECTION

FIG. 24

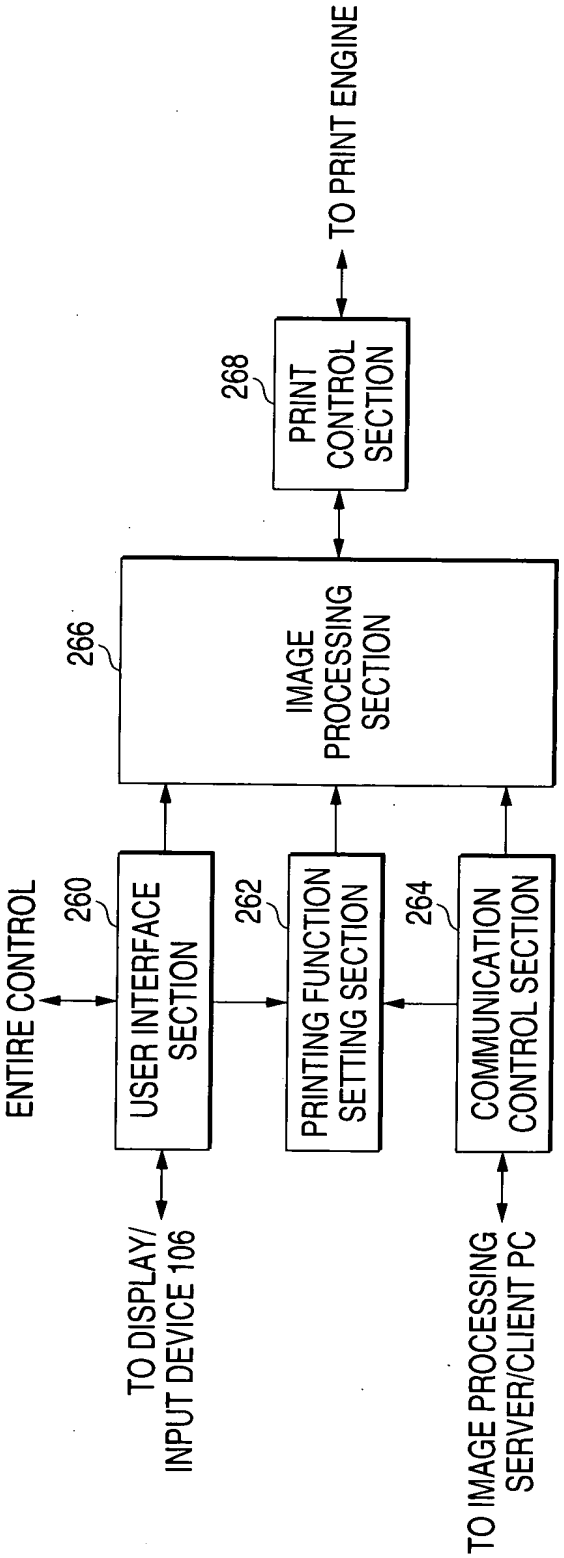

26
ENTIRE CONTROL
260
USER INTERFACE SECTION
262
PRINTING FUNCTION SETTING SECTION
264
COMMUNICATION CONTROL SECTION
266
IMAGE PROCESSING SECTION
268
PRINT CONTROL SECTION
TO PRINT ENGINE
TO DISPLAY/ INPUT DEVICE 106
TO IMAGE PROCESSING SERVER/CLIENT PC

FIG. 25

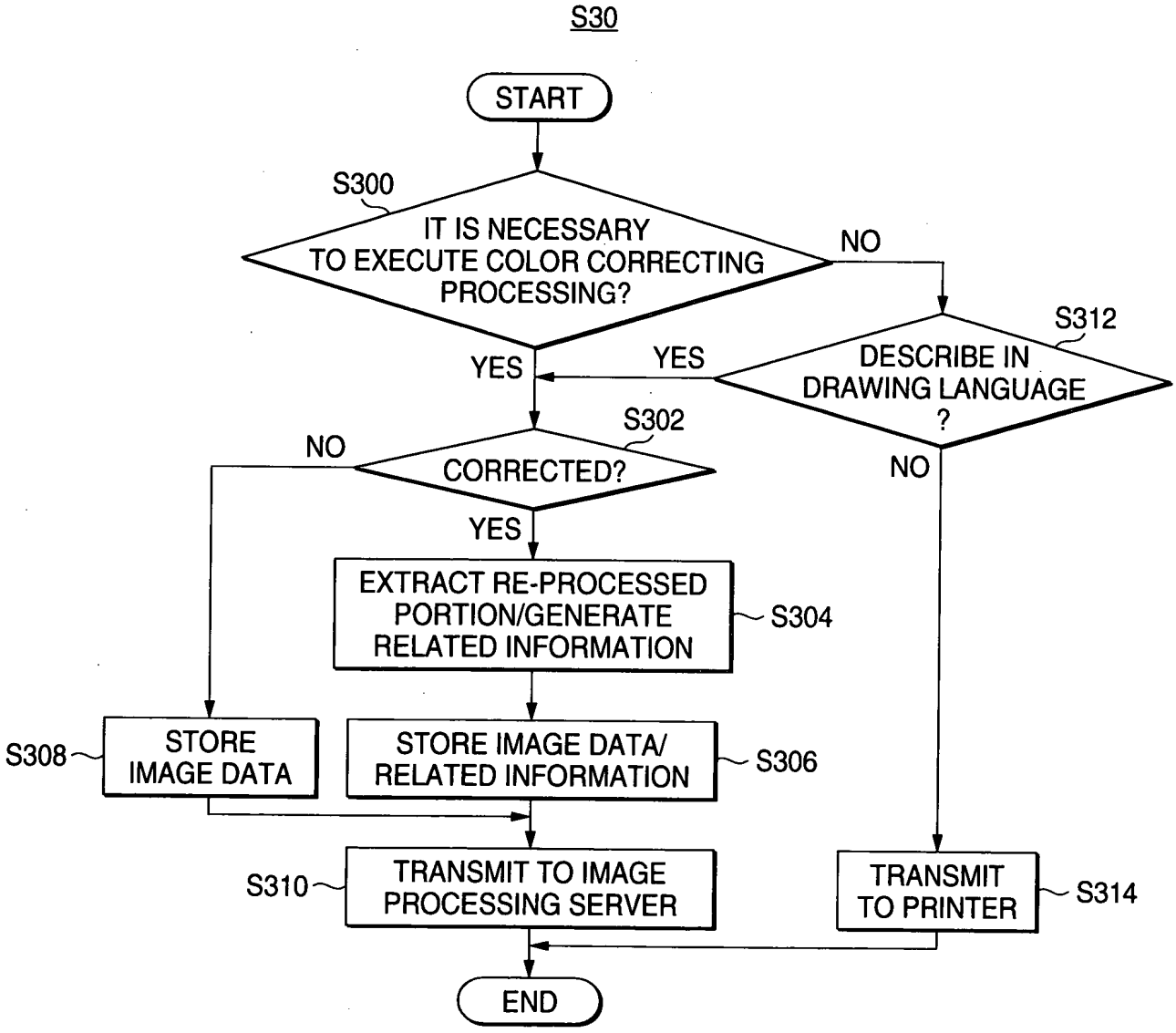

S30
START
S300
IT IS NECESSARY TO EXECUTE COLOR CORRECTING PROCESSING?
NO
YES
S312
DESCRIBE IN DRAWING LANGUAGE ?
YES
NO
S302
CORRECTED?
NO
YES
EXTRACT RE-PROCESSED PORTION/GENERATE RELATED INFORMATION
S304
S308
STORE IMAGE DATA
STORE IMAGE DATA/ RELATED INFORMATION
S306
S310
TRANSMIT TO IMAGE PROCESSING SERVER
TRANSMIT TO PRINTER
S314
END

FIG. 26

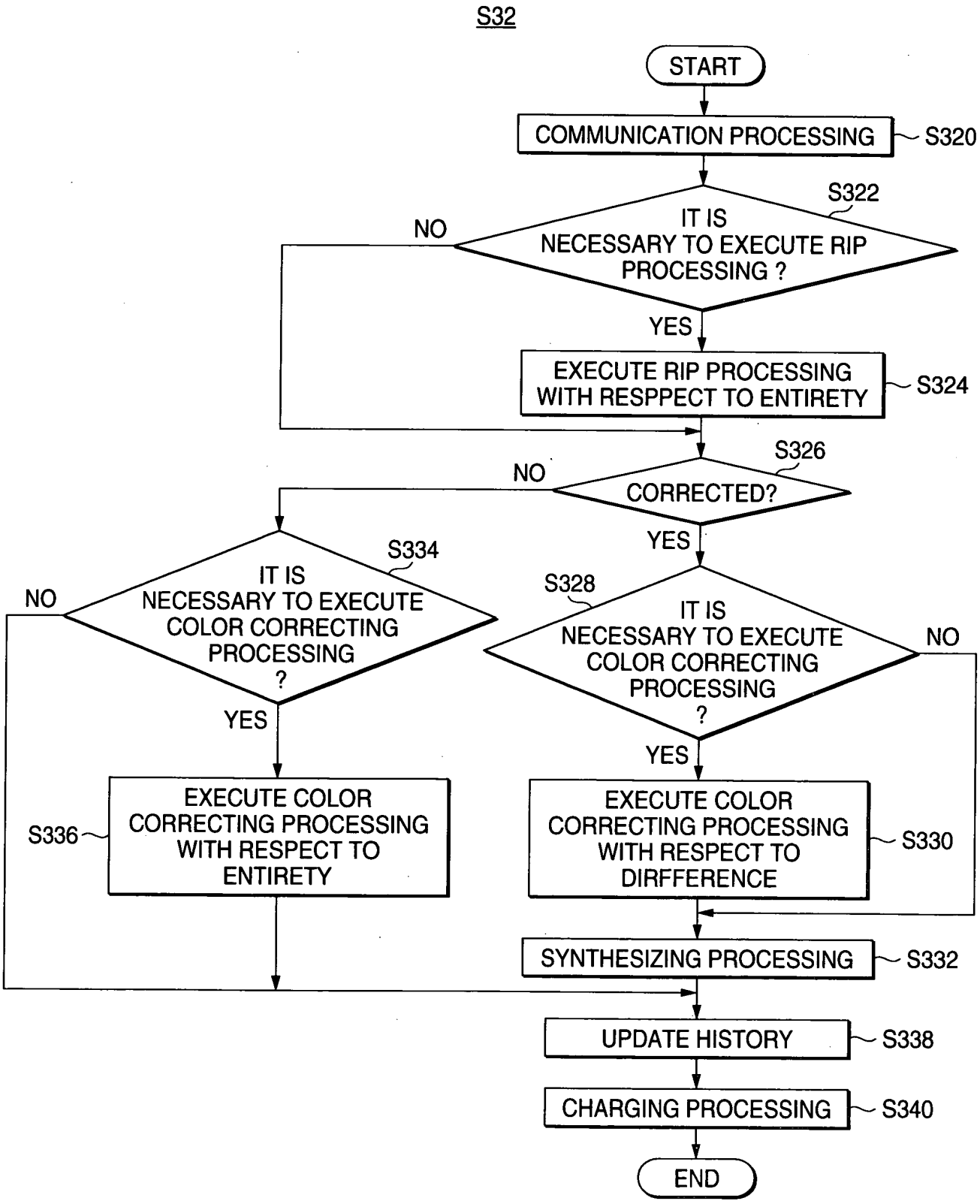

S32
START
COMMUNICATION PROCESSING
S320
S322
IT IS NECESSARY TO EXECUTE RIP PROCESSING ?
NO
YES
EXECUTE RIP PROCESSING WITH RESPPECT TO ENTIRETY
S324
S326
CORRECTED?
NO
YES
S334
IT IS NECESSARY TO EXECUTE COLOR CORRECTING PROCESSING ?
NO
YES
S328
IT IS NECESSARY TO EXECUTE COLOR CORRECTING PROCESSING ?
NO
YES
S336
EXECUTE COLOR CORRECTING PROCESSING WITH RESPECT TO ENTIRETY
EXECUTE COLOR CORRECTING PROCESSING WITH RESPECT TO DIRFFERENCE
S330
SYNTHESIZING PROCESSING
S332
UPDATE HISTORY
S338
CHARGING PROCESSING
S340
END

FIG. 27

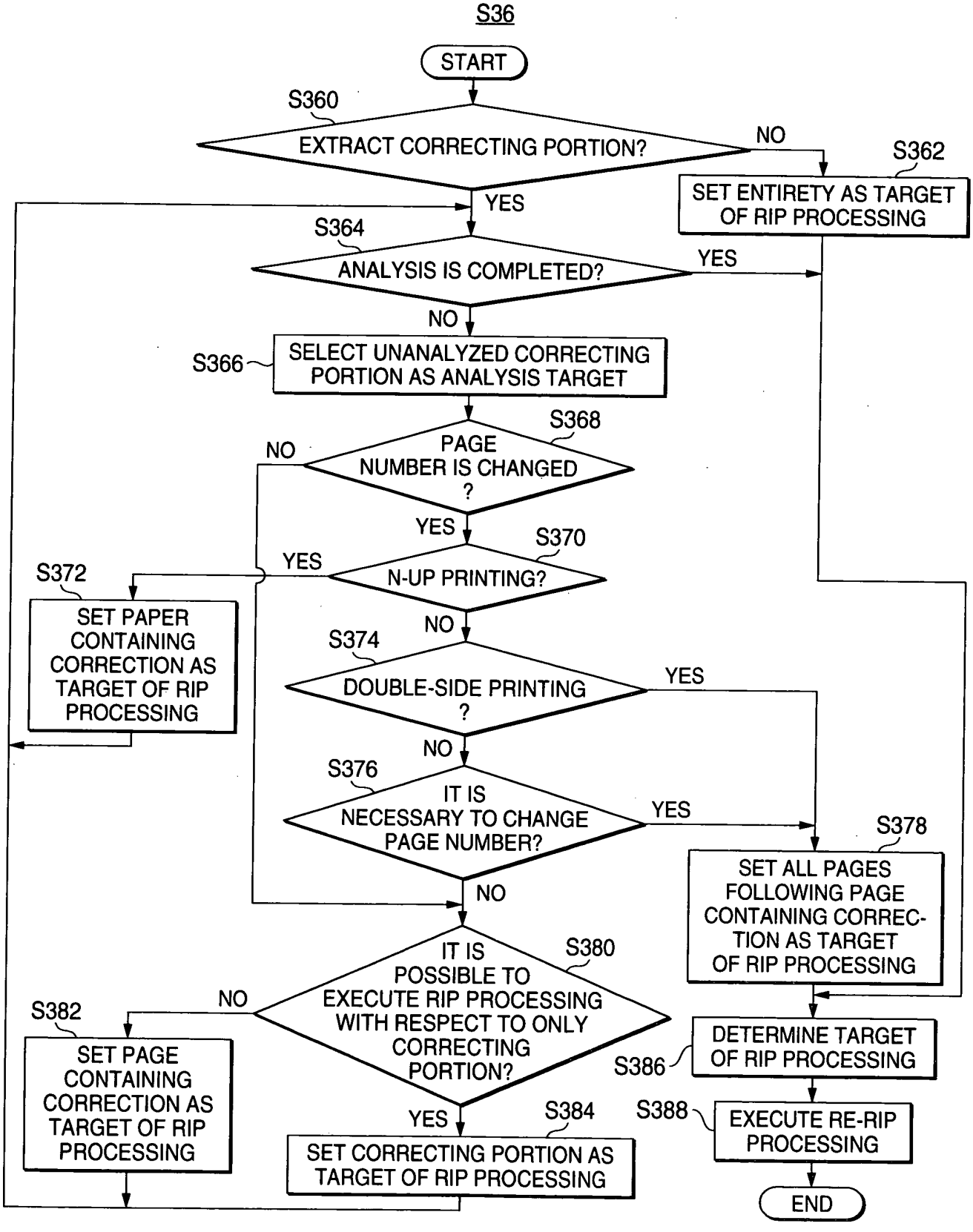

S36
START
S360
EXTRACT CORRECTING PORTION?
NO
S362
SET ENTIRETY AS TARGET OF RIP PROCESSING
YES
S364
ANALYSIS IS COMPLETED?
YES
NO
S366
SELECT UNANALYZED CORRECTING PORTION AS ANALYSIS TARGET
S368
PAGE NUMBER IS CHANGED ?
NO
YES
S370
N-UP PRINTING?
YES
S372
SET PAPER CONTAINING CORRECTION AS TARGET OF RIP PROCESSING
NO
S374
DOUBLE-SIDE PRINTING ?
YES
NO
S376
IT IS NECESSARY TO CHANGE PAGE NUMBER?
YES
S378
SET ALL PAGES FOLLOWING PAGE CONTAINING CORREC-TION AS TARGET OF RIP PROCESSING
NO
S380
IT IS POSSIBLE TO EXECUTE RIP PROCESSING WITH RESPECT TO ONLY CORRECTING PORTION?
NO
S382
SET PAGE CONTAINING CORRECTION AS TARGET OF RIP PROCESSING
YES
S384
SET CORRECTING PORTION AS TARGET OF RIP PROCESSING
S386
DETERMINE TARGET OF RIP PROCESSING
S388
EXECUTE RE-RIP PROCESSING
END

FIG. 28

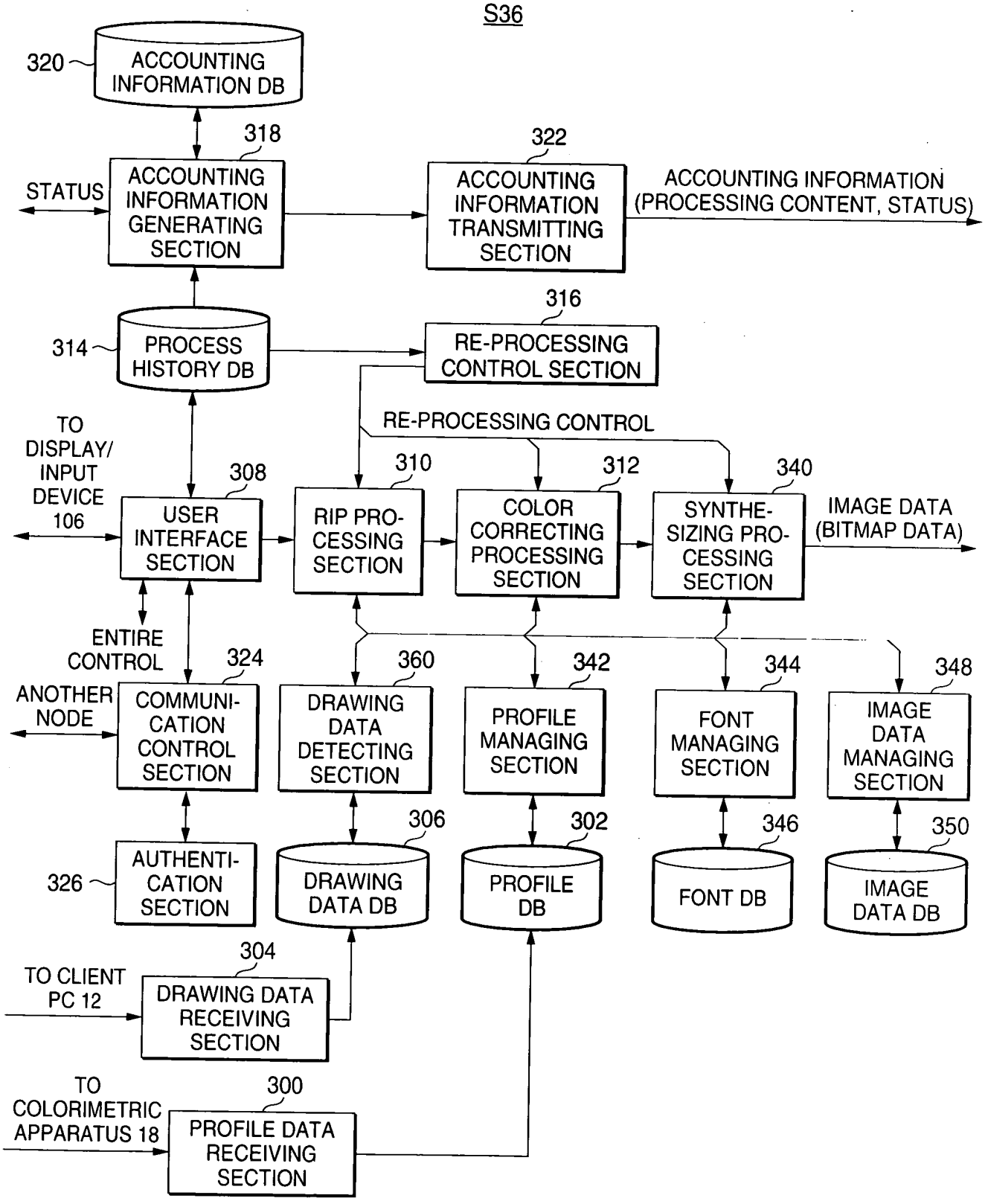
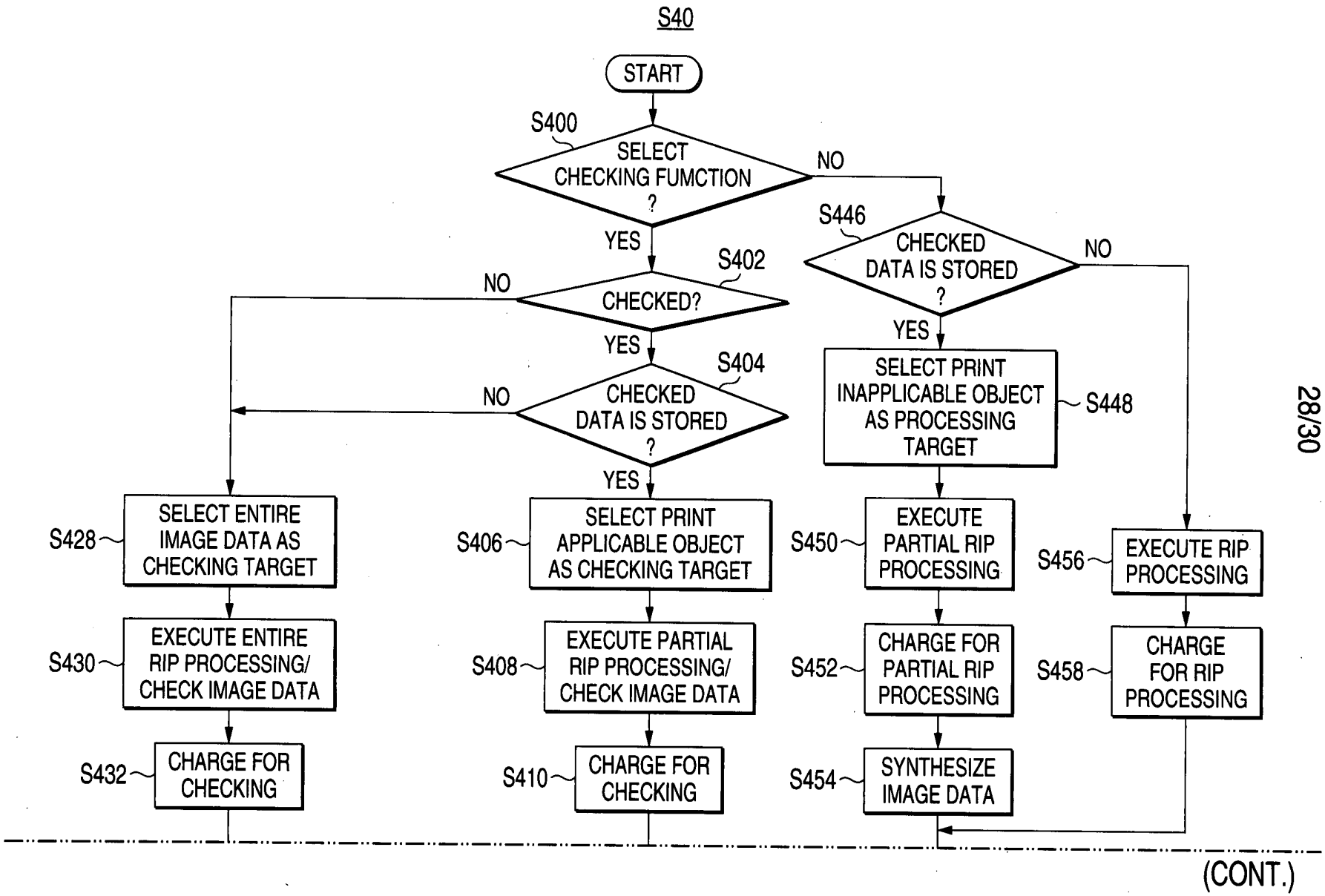

S36
320
ACCOUNTING INFORMATION DB
318
322
STATUS
ACCOUNTING INFORMATION GENERATING SECTION
ACCOUNTING INFORMATION TRANSMITTING SECTION
ACCOUNTING INFORMATION (PROCESSING CONTENT, STATUS)
316
314
PROCESS HISTORY DB
RE-PROCESSING CONTROL SECTION
RE-PROCESSING CONTROL
TO DISPLAY/ INPUT DEVICE 106
308
310
312
340
USER INTERFACE SECTION
RIP PRO-CESSING SECTION
COLOR CORRECTING PROCESSING SECTION
SYNTHE-SIZING PRO-CESSING SECTION
IMAGE DATA (BITMAP DATA)
ENTIRE CONTROL
324
360
342
344
348
ANOTHER NODE
COMMUNI-CATION CONTROL SECTION
DRAWING DATA DETECTING SECTION
PROFILE MANAGING SECTION
FONT MANAGING SECTION
IMAGE DATA MANAGING SECTION
306
302
346
350
326
AUTHENTI-CATION SECTION
DRAWING DATA DB
PROFILE DB
FONT DB
IMAGE DATA DB
304
TO CLIENT PC 12
DRAWING DATA RECEIVING SECTION
TO COLORIMETRIC APPARATUS 18
300
PROFILE DATA RECEIVING SECTION

FIG. 29


S40
START
S400
SELECT CHECKING FUMCTION ?
NO
YES
S402
CHECKED?
NO
YES
S404
CHECKED DATA IS STORED ?
NO
YES
S446
CHECKED DATA IS STORED ?
NO
YES
S448
SELECT PRINT INAPPLICABLE OBJECT AS PROCESSING TARGET
S428
SELECT ENTIRE IMAGE DATA AS CHECKING TARGET
S430
EXECUTE ENTIRE RIP PROCESSING/ CHECK IMAGE DATA
S432
CHARGE FOR CHECKING
S406
SELECT PRINT APPLICABLE OBJECT AS CHECKING TARGET
S408
EXECUTE PARTIAL RIP PROCESSING/ CHECK IMAGE DATA
S410
CHARGE FOR CHECKING
S450
EXECUTE PARTIAL RIP PROCESSING
S452
CHARGE FOR PARTIAL RIP PROCESSING
S454
SYNTHESIZE IMAGE DATA
S456
EXECUTE RIP PROCESSING
S458
CHARGE FOR RIP PROCESSING
(CONT.)

(FIG. 29 CONTINUED)

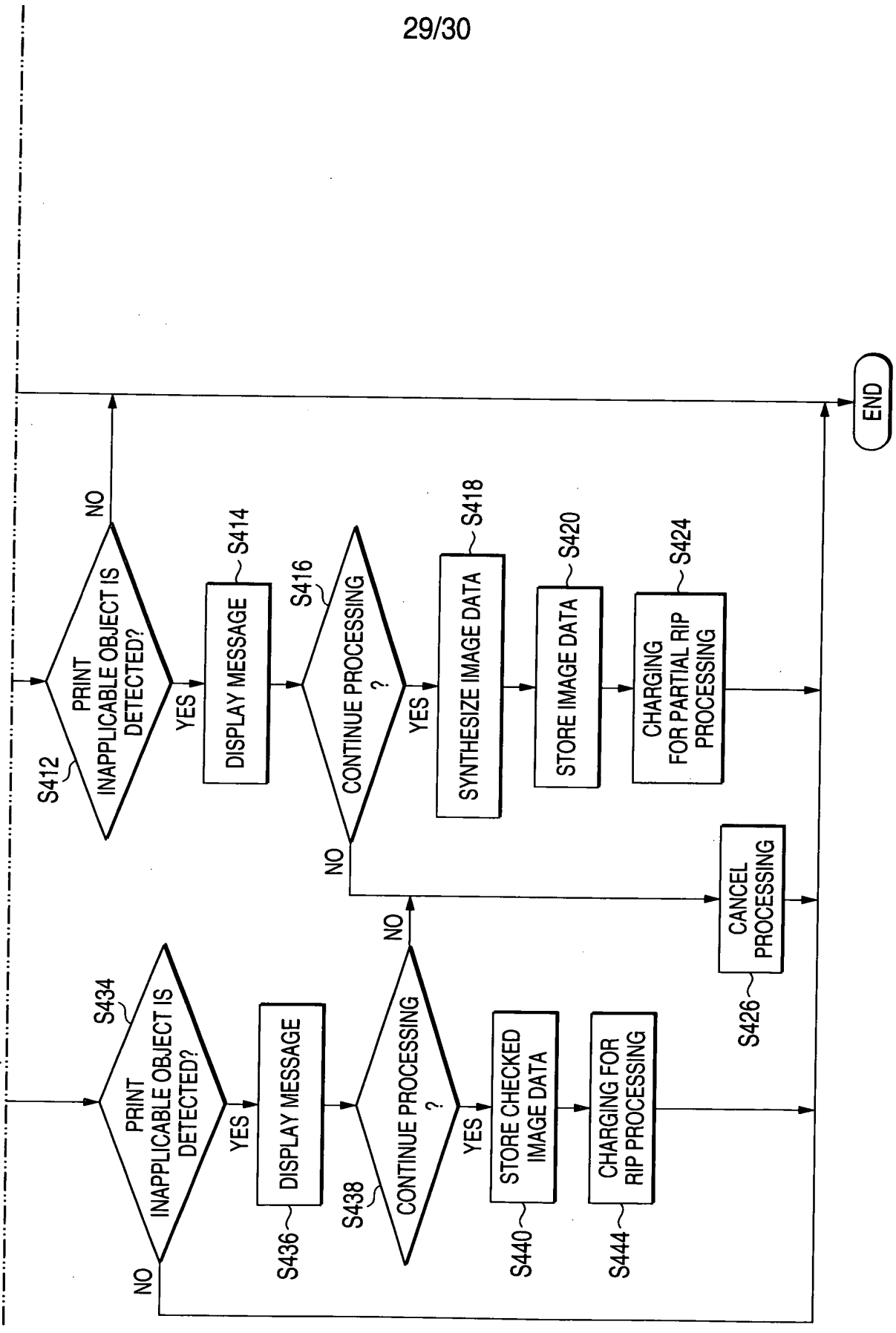


FIG. 30

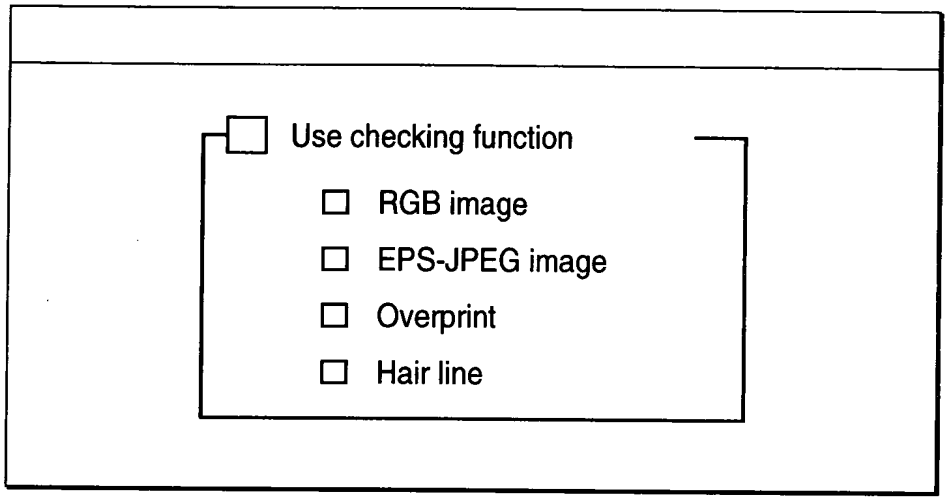
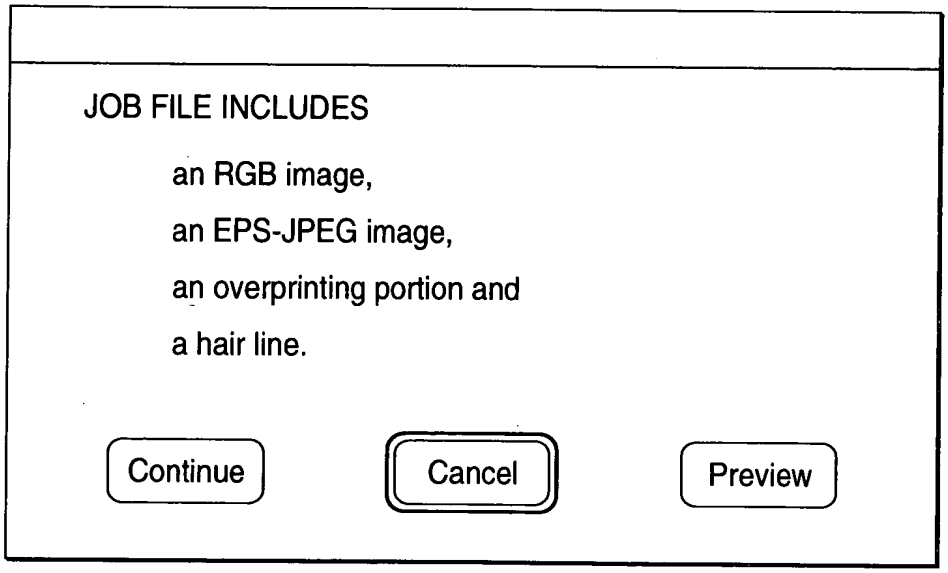

Use checking function
RGB image
EPS-JPEG image
Overprint
Hair line

FIG. 31


JOB FILE INCLUDES
an RGB image,
an EPS-JPEG image,
an overprinting portion and
a hair line.
Continue
Cancel
Preview